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Milton, the blind, who looked on Paradise!

Beethoven, deaf, who heard vast harmonies!

Byron, the lame, who climbed toward Alpine skies!

Who pleads a handicap remembering these?

—Violet Alleyn Storey

AT some stage in her child's development, it is natural for every mother to suffer moments of doubt as to whether that child is progressing as rapidly as other parents' children. Milton, Beethoven, Byron — to mention only a few — conquered the world in spite of *extreme* physical handicaps. Your child, fortunately, enjoys the wonderful benefits—through your physician—of modern preventive and curative medicine denied to children of only a few generations ago.

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HYGEIA•

SEPTEMBER 1937

THE HEALTH MAGAZINE

Published and copyrighted, 1937, by American Medical Association
Edited by Morris Fishbein, M.D.

Volume 15
Number 9

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an article on the hapless, hopeless hypochondriac, who chases an elusive rainbow of health, and the wise man, who finds health as a by-product of sane, purposeful living. The author, Dr. Thurman B. Rice, chief of the Bureau of Health and Physical Education, Indiana State Board of Health, is well known to Hygeia readers.

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Are two pairs of hands enough?

"OUR BABY will have every advantage."

Of course. But are affection, the determination to give children "every advantage," parental devotion, enough?

No, frankly they are not. The two pairs of hands of even the most conscientious parents are *not* enough to guide a child safely past the hazards that confront her. The little body hasn't yet built up a very sturdy resistance against many of the disease-producing germs we all encounter every day of our lives. She is susceptible to a whole group of illnesses that are visited almost solely upon children—the so-called "diseases of childhood." Her diet, her hours of rest, her health habits—all have an important bearing on her future.

That is why two pairs of parental hands are not enough. A *third parent* should be added to the family circle. That third parent is . . . the doctor.

To be sure, you are quick to get in touch with the doctor when your child is ill. But isn't the youngster really entitled to more than that? Shouldn't she see the family doctor often enough to regard him not as a stranger but as a friend? And shouldn't he know about her previous illnesses and be familiar with her little whims and how to get around them?

Then, too, the doctor should have the opportunity of giving her full benefit of modern *preventive* medicine—consultations about her growth and development, and protection against such diseases as smallpox, diphtheria, and whooping cough.

He, too, should have hold of her little hand, guiding her along the road of health that is every child's right.

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EDITORIAL

LEARNING ABOUT HEALTH

FOR MANY YEARS the child went to school only to have his mind educated. Little or no attention was paid to the body, though forward-looking educators realized that both mind and body constitute the child and that the whole child goes to school. Then came the era of formal physical education consisting of calisthenics, gymnastics and drills, with little regard for values other than muscular development. This in turn has given way to physical education which places more weight on sports. The present trend seems to be away from exclusive emphasis on competitive sports of the intercollegiate spectacle type, toward a program in which all the children may take part. In this pageant of progress, health education, as distinguished from physical education, has thus far played a relatively small part, but it is now claiming attention.

Health education claims to be something more than physical education. While in no way belittling the importance of sensible participation in wholesome sports as a means of pleasure and recreation and as a contribution to health of body and mind, health education takes in a broader territory. It aims at teaching about a well rounded, healthful life, based on a sensible knowledge of the needs of the body. It devotes attention not only to exercise, training and the acquisition of proficiency in sports but to questions of diet, sleep, elimination, care of the body, hygiene of the surroundings, disease prevention and periodic check-up of the healthy body as a preventive measure. It is well recognized that human beings as a rule tend to one of two extremes in their attitudes toward personal health. Either they blithely neglect reasonable precautions or else they become morbidly and unwholesomely introspective, living for health alone and thus totally missing their objective. Health education aims to modify both extreme attitudes toward a happy and sensible middle ground.

That the average nonmedical person is ignorant of many fundamental principles of health is abundantly evidenced by studies made from time to time of groups of students. Judah examined the health knowledge of freshmen entering the University of Illinois and discovered a lamentable lack of the most elementary knowledge concerning health and hygiene, as well as the persistence of superstitions dating back to the intellectual twilight of medieval times.

Prof. E. Benton Salt at the University of Florida finds as high as 92 per cent of seventh grade white students missing simple questions in the form of true-false selection tests. At the bottom of page 777 is a selection of questions from Professor Salt's tests. The answers are on another page. Any group of teachers can cite similar experiences with various health information tests.

The correspondence addressed to medical and public health agencies which answer queries is full of questions asked in all sincerity which would be answered automatically out of an adequate store of health information. The following are excerpts from such correspondence: Do carrots make the hair curly? Which are more harmful, oranges or grapefruit? How many oranges daily must I eat to offset the acid effects of a box of candy? What kind of a diet will improve my knowledge of mathematics? How can a full-grown

person add to his height? Where can I buy a concentrated food that will contain all the important food ingredients in one?

Much has been said about the obligation of schools for the health of children. HYGEIA has dealt with this matter in previous editorials and numerous articles. The influence of physical defects on school progress is recognized. Attention must be given to underweight, to infected tonsils and adenoids, to posture, to physical development, to environmental hygiene and to prevention of communicable diseases. But all these objectives depend on knowledge and acceptance of that knowledge and on action on the basis of that knowledge. Solomon prayed for wisdom and received in addition thereto wealth, power and honor. Give the people wisdom based on knowledge, and the other goals will readily be attained.

When all is said and done, the primary obligation of the schools, so far as health is concerned, is health education.

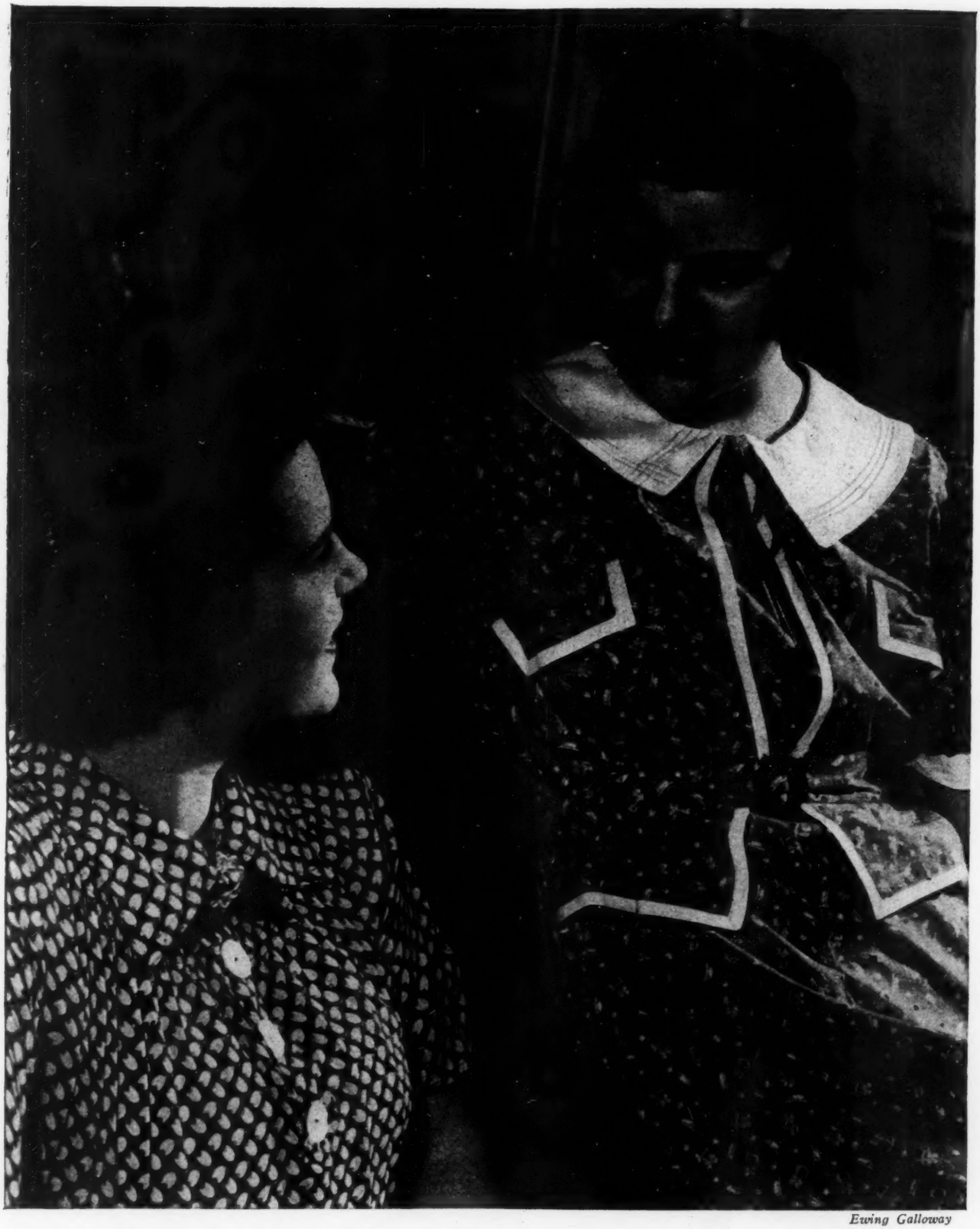
—W. W. BAUER

CAN YOU ANSWER THESE CORRECTLY?

The following questions are selected from a list of 150 questions used by Professor Salt. Each statement is either true or false. After each is a T for True and an F for False. Circle the T if you regard the statement as true, the F if you consider it false. Turn to page 852 for the correct answers.

1. Halitosis can be cured by using an antiseptic mouthwash. T F
2. Boils are caused by bad blood attempting to rid itself of impurities. T F
3. Tea and coffee both contain caffeine. T F
4. Fever sores are often caused by kissing. T F
5. A child may appear to be in the best of health and at the same time have tuberculosis of the lungs. T F
6. Alcoholic drinks have great virtue in the treatment of colds. T F
7. Proper temperature, humidity and circulation are more important factors in ventilation than the carbon dioxide content of the air. T F
8. Lemon juice applied to the skin will remove freckles. T F
9. Yeast will cure all forms of constipation. T F
10. Chilling the body reduces the efficiency of the body defenses in resisting bacteria. T F

(Answers on page 852)



Ewing Galloway

THIS BUSINESS OF GROWING UP IS INDEED CONFUSING; BUT THE DISTRESSES AND DIFFICULTIES OF THE ADOLESCENT — AND OF HIS OR HER ELDERS — CAN BE SMOOTHED AWAY BY SYMPATHETIC UNDERSTANDING.

ADOLESCENCE

By FRANK HOWARD RICHARDSON

IF THERE is one period in the life of man that merits the adjective "confusing" more than any other, it is that period in which the child is passing from infancy to maturity, which we call adolescence. It is confusing for many reasons, and it is confusing to many people—to the parent, the teacher, the doctor and, perhaps most of all, to the child himself.

There are many reasons for this confusion. First of all, there is so much about adolescence that is mysterious to us. We can readily understand why growth must take place, if the child is ever to become a man; but we cannot see why it should take place in the uneven tempo that is observed. That it takes place at varying rates is known; but we have not the slightest conception of what it is that determines this rate. A study of the speeds at which development proceeds may be enlightening.

The rate of development of the baby before birth is enormous, and this continues at top speed after birth. Roughly speaking, his weight doubles at the end of the fifth or sixth month of his life, and at 6 years it is about six times as great as it was at birth. He increases in height 50 per cent his first year and at 6 years is about twice his height at birth. This increase continues at a fairly regular rate until the tenth year in the girl and the twelfth year in the boy. At these ages there is what may fairly be called a spurt that takes place and continues for perhaps 4 years, affecting both height and weight. During these years the girl may gain 40 pounds, the boy 50; these figures are, of course, merely averages.

It is easy enough to say that this growth is probably the result of glandular action. This is perfectly true, as well as obvious. But of course it explains nothing, unless we can name what it is that starts the glands to functioning at just this time; and that is so far unknown to any one.

This growth is not confined to any one part or system of the child's body; almost everything shares in the marked growth, which involves organs, tissues and systems indiscriminately. Naturally enough, this amazing spurt brings in its wake many puzzling situations. The adolescent expansion can be compared to the sudden enlargement of a little local shop into a huge mail-order concern.

First of all, the little store must be replaced by a huge warehouse. This would involve all sorts of complicated building operations, which are not necessarily easy to plan and put into effect. Yet they would be simple indeed compared with the ticklish problems of finance, credit, advertising, stocking of goods and distribution of the finished product.

Similarly the child must enlarge his place of business from a small-scale affair into a large structure, and he must expand his business affairs at the same time. Previously his customers have been the comparatively few intimates of his immediate family and a limited circle of outside acquaintances who have dealt with him only in simple terms and on a basis that calls for little imagination or understanding of abstract principles.

Suddenly, in the midst of his enlarging operations, which are certainly taxing in the extreme, he finds himself called on to deal with a rapidly increasing clientele. His customers are no longer the small, select group he has previously known, whose ways of thinking and acting have been carefully adjusted to his limited capabilities. Instead, he finds that he must deal with all sorts and conditions of persons, who are indifferent to his needs and callous as to his sensibilities. They are customers who are out to get the full value of everything they buy, and he has to watch his step every minute of the day.

Now we know that no merchant in the midst of such an exacting expansion of his business would plunge into an intensive advertising campaign to get new business before he was prepared to take care of what he already had. Yet that is exactly what parents are constantly doing with their youngsters at this most critical period of their lives. It seems to be the time many parents choose for tightening the reins of discipline, and for seeing what they can do to show "who's boss around here." This comes also just at the moment when it is natural for the child to begin to feel out his new powers and to want to begin to make decisions for himself. Or else they may try a "hard boiled" policy only to find that their attempts at discipline fail wretchedly. Then, as a result, they go to the other extreme and let up on all sensible restraint in the mistaken notion that the younger generation has come to be a law unto itself, and nothing can be done about it.

The school men have been equally mistaken in their policy. Instead of letting up on the mental load at this time, they have chosen to increase it as the child passes from elementary to high school, with its wide range of subjects, its increased homework and its conflicting demands for study, social life and athletics.

Worst of all, perhaps, is the way our commercial amusement interests have exploited the entertainment desires of our children. Taking

advantage of the fact that at this period one of the most prominent new interests of boy and girl alike has to do with sex, they have not hesitated to stimulate the sex instinct to an extreme degree, undreamed of even so short a time as a generation ago, and so have added immeasurably to the strain and confusion of this strenuous period in the lives of our youngsters. Movie, radio, magazine—all have joined in a mad scramble to get as much out of the younger generation as the traffic would bear. Helpless, we have allowed them to subject our immature adolescents to a barrage of sex stimulation to which they could not adjust themselves without serious harm.

Turning back from the emotional to the strictly physical, we must realize that this is in a real sense the testing time for the young organism. If there are any structural flaws, now is the time that they are likely to appear. If heart or kidneys are not sound, there is every likelihood that they will make trouble now. And the occurrence of tuberculosis increases around this age, while the lowered resistance makes it more severe, if it does appear.

It is easy to see why this should be so. The sudden growth, or expansion, is by no means uniform and equal in the various organs, tissues and systems of the body. Hence it is easy to see that strains due to the lack of proportion of the various parts may easily occur. A heart that was large enough for the child's small body, and that will later become strong enough to supply the needs of the adult frame when it has caught up in growth, may be quite insufficient to meet the needs of a suddenly expanded adolescent physique. The same thing may be true of any of the other organs during this transitional state, before there has been time for them to adjust to the increased demands by a proportionate expansion.

Perhaps the greatest source of confusion in this whole changing, unsettled picture is the uncertain status of the adolescent in the rapidly expanding world in which he finds himself. Previously he has been a child, with a child's strictly limited environment and a child's unquestioning obedience to the commands of his elders. After he has passed through this period of adolescence, which means "becoming adult," he will no longer have superiors who will command him in everything; he must give himself commands. During this transition, however, no one quite knows how much to order him about and how much to leave him alone. His elders look at his rapidly increasing height and say, "You great big hulking fellow, you are almost as tall as your father! Why can't you begin to act like a man?" Yet the moment he does try to act like a man and make a decision in a matter of the slightest importance, they will forget his size, remember only his years and exclaim, "Why, you're only a child! What makes you think you know enough to decide things for yourself?"

If his elders, whom he has hitherto regarded with such respect and whose opinions have been his guide, are themselves so confused about his status, is it to be wondered at that he finds himself quite at sea in the matter, or that he acts one minute like a little child and the next like a blundering adult? "For if the trumpet give an uncertain sound," a wise man asked centuries ago, "who shall prepare himself to the battle?"

This, then, is the situation with which every parent, every teacher, every adult who deals with young people, finds himself brought face to face. Instead of having orderly rules of development to guide him, he finds confusion worse confounded. Yet he cannot leave things alone; he must meet difficult problems as they come along, and he must try to keep the turbulent adolescent in some kind of order.

Perhaps the hardest lesson for us to learn, and the most important one, is that we cannot deal with adolescents as a class, a group or a herd. If we are to be fair to them, and give them the guidance to which they are entitled, we shall have to treat them as individuals, differing widely from one another in the uneven way in which they are developing, even though they may be of the same chronological age.

One of the most heartening things about the newer pedagogy is the insistence which the normal schools and teachers' colleges are placing on the treating of children as individuals, even though they are encountered in large classes. The teacher who has given "crowding" as an excuse for using wholesale methods of instruction is being told that this alibi will no longer be accepted. And if the teachers can learn to deal with the adolescent as an individual, and not as one of a big group with uniform characteristics and uniform needs, perhaps it is not too much to expect that the time may come when his father and mother will reach a similar state of good sense!

No, none of us can hope to understand adolescence, for it will always be a matter of understanding, or of trying to understand, the individual adolescent—which is something entirely different. And, while remembering that the "hands-off" policy is no solution of the problem and that we shall have to guide him and protect him from his inexperience and want of knowledge of how to direct himself in the big decisions that come to him, we may well adopt as our motto that wise maxim: "If we cannot help, let us at least be sure that we do not hinder." We shall then no longer chafe at the confusion which characterizes the period of adolescence. Realizing that it is quite normal and to be expected, we shall quietly adjust ourselves to it, knowing that with maturity will come a clarifying readjustment.

By MOTIER HARRIS FISHER

BEST FOOT FORWARD!

THE JOB OF parenthood is one which allows little respite at any time of the year, as all who have tried it know, but the weeks just prior to the opening of school in September are particularly exacting for those who have school-age children. These weeks of preparation at the end of summer are important, especially to the little beginner, for in them much can be accomplished that will help him off to a good start at school. If he begins the school year with sails properly trimmed and the best foot forward, he stands a better chance of holding his own throughout the year. A poor start, on the other hand, may set the wrong tone for several months or even for several years.

You know already that this good start depends most of all on the child's physical condition, on such factors as sound teeth, good eyesight, correct posture, sufficient weight and general vigor. There is no doubt that school exacts a toll in health from most children. How often we have heard parents say, "He was never ill a day in his life until he started to school." It is true that the chances of infections and contagions are multiplied by the numbers of children gathered together. It is also true

that your child's best protection is the natural resistance which a sturdy body offers. For this reason, parents cannot afford to leave undone anything that will help to build up this resistance.

The importance of health for the child's success at school has been emphasized so often that it may have become monotonous, particularly to those parents who have always been conscientious in doing all they could to make their children robust. There is one aspect of the child's preparation for school, however, which has not been so often reiterated and which some parents may have overlooked. This is that the good health so necessary for September's initiation depends to a large extent on the child's emotional condition and mental attitude, which parents themselves determine more than any one else. Because young children are inarticulate, many of us fail to recognize the signs of the nervous tension that accompanies the advent of school days, even though it may be of a nature to constitute a menace to health. The fear and anxiety with which many a 6 year old contemplates the new life which he will soon enter have often been built up unknowingly by his own mother or father. The mother who corrects her child by saying, "If you do that when you go to school, the teacher will think you are a baby," contributes to this anxiety; likewise the father who says jokingly, "You'd better scrub behind those ears; you'll be going to school next week, and the teacher always pulls ears that are not clean." The child knows that Father is joking, but just the same there is lodged in his consciousness the suggestion that school is an unpleasantly exacting institution. Other suggestions are added until the little fellow has a distorted view of the experience which awaits him. For weeks before the opening he is being constantly reminded of the ordeal which looms ahead in the near future, an ordeal against which, because he regards it as inevitable, he offers no protest. It gradually assumes terrifying aspects. No one knows how his heart sinks whenever the subject is brought up; no one guesses the constant nervous tension in which he spends his days.

As a shadow of coming events, he is put through further inquisition in the form of a vigorous shampoo, unaccustomed professional hair cut, shoe fittings and general renovation, until he scarcely knows whether he is coming or going. His parents, feeling that this is no time for economy, insist that he shall have the best of everything. And so the first day of school finds him sitting in a torment of self consciousness with new shoes burning his feet and stiff new clothes making him feel that he is a target for every eye.

The mother who inspected her little son with so much pride when he was all dressed in the morning, ready for his first day of school, is surprised and disappointed that he returns home ready to flare up in a temper or to cry without provocation. She is eager to hear his account of the day, but it is not forthcoming. He says crossly that he wants to be let alone. He does not wish to think of school. His parents are puzzled. They were so eager to do the right thing; they tried so hard to send him out well equipped, and the child has no appreciation. They may even be a little hurt.

They were all too eager to do the right thing, and in their eagerness they succeeded in doing most of the wrong ones. It never occurred to them that the old comfortable shoes might have increased the child's peace of mind and added to his physical comfort; that clothes to which he was already accustomed would have spared him embarrassment. His mother, in her pride of the smart new jacket, never suspected what a faint little heart beat under it. His father, looking at the sturdy shoes made of good leather and costing nearly as much as his own size elevens, congratulated himself on being a generous provider.

The child's appetite, poor for several weeks, becomes poorer during the first days of school. He is restless at night, too, and his color is not good. It is no surprise to his mother that it becomes necessary to put him to bed with a cold at the end of the week. She is distressed because he may have to be out for some time, and it will be difficult for him to keep pace with the others in his class.

So much for a typical wrong beginning. Most of us have observed it in similar aspects, but we forget so easily that what seems trivial and fit for joking to an adult is tremendously serious and important to the young child. Those children who have been gradually initiated to school through kindergarten, or even earlier in the nursery group, are fortunate in this respect because they have learned already that school holds, not terrors but pleasant experiences. They look forward to the serious business of the first grade with composure and are immune to the jokes of those adults who think it good fun to make facetious remarks about school.

Even timid little souls to whom school is a terrifying new experience will soon discover that there is no reason to be afraid, but unfortunately much harm may be done before they have made the discovery. The emotional strain of the first week leads up to a cold; this in turn may leave the child weakened and susceptible to the first contagion that comes along. He is out of school so much that he falls behind the other children and becomes discouraged. Because he has no feeling of triumph, he does not learn to enjoy school. The second year he returns with a reluctance equal to or greater than that which he had in the beginning. He has been wrongly conditioned, and it may be

a long time before he will be won to the happier attitude which makes for good health.

If your child is to have his best foot forward this September, it might be well to consider the following points with regard to his preparation. Some of them will apply to children who have already attended school, but it is to the little beginner that they are most applicable:

1. Have the child's physical condition thoroughly checked. All possible corrections should be made. Necessary visits to the doctor and dentist should be arranged long enough before school opens to allow an interim for recovery from any nervous strain that may have been involved.

2. Let him forget as long as possible that school is imminent. When it becomes necessary to discuss the subject, do so in the most casual manner, taking care to infer that something in the nature of a treat is in store for him.

3. Purchase any clothes that are necessary long enough in advance for the new to wear off and for the child to feel at home in them. The style of these clothes should not deviate too much from the accustomed. If you fancy your little daughter dressed in something distinctive that may be reminiscent of a quaint little English school girl, please remember, for her sake, that she goes to school in the United States and that Alice in Wonderland is not at present the vogue for 6 year olds. Perhaps the teacher would be favorably impressed if your son wears the little blue serge suit with the white Eton collar and neat tie; but it is the opinion of the other boys that will count most for him, and the same kind of sweater and cords that they wear will help to make him one of the group. He must win the teacher's approval in another way.

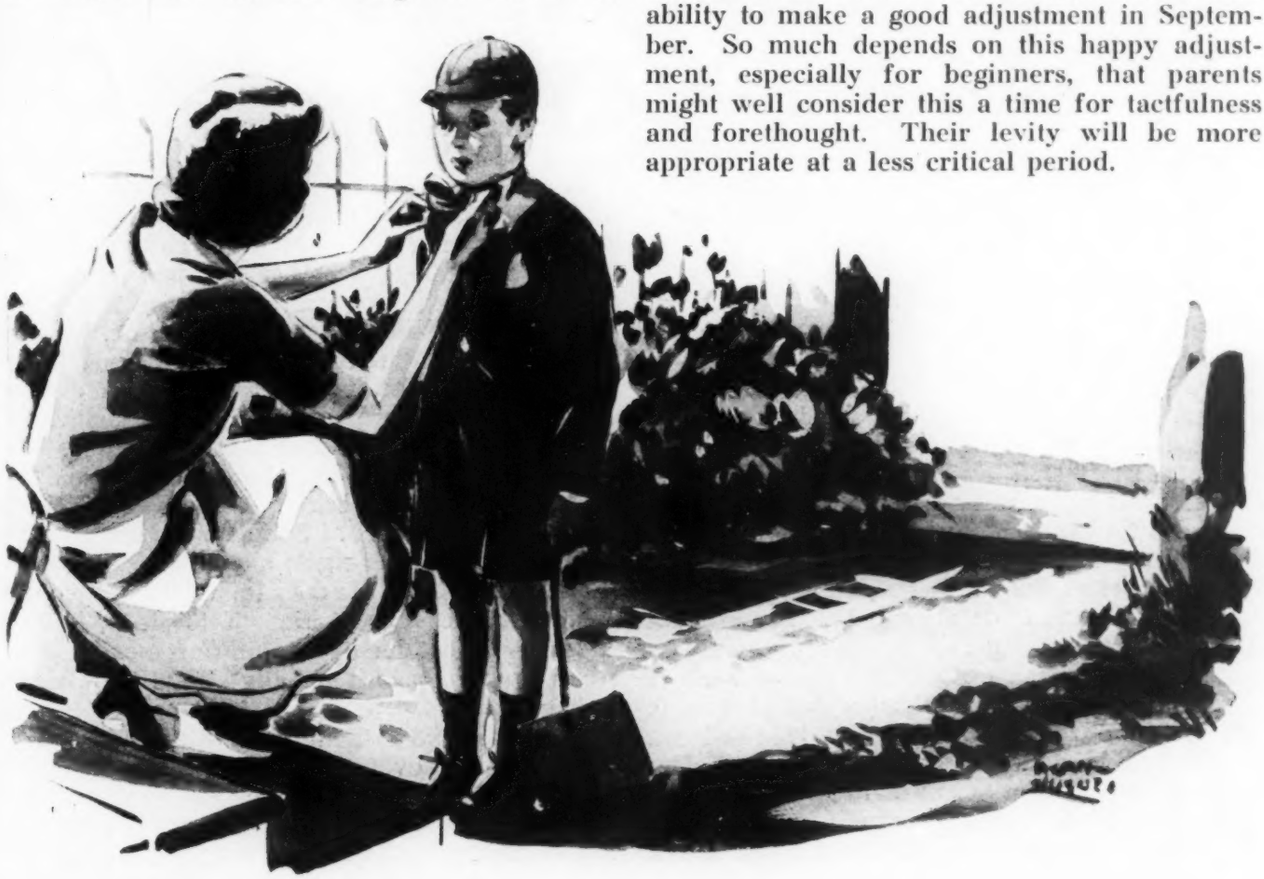
4. Have the necessary haircut given several days before school opens, if the child is not to feel like a shorn lamb.

5. If all the children who are to be in his class are strange, arrange for your child to become acquainted with one or two before school begins. There is nothing like companionship to give the timid child self confidence.

6. If the child is unusually diffident, it might help him a great deal to be given a little head start in his lessons before he enters school. The school principal is usually willing to advise parents as to which books may be safely introduced beforehand. So many beginners have had this introduction already from older brothers and sisters that your child may feel discouraged by their superior knowledge.

7. If you are new to the community, it will be an added advantage for your child to become familiar with some of the games peculiar to the locality before he is forced to show his awkwardness at school. An informal neighborhood party, where the children are free to choose their own games, may be helpful.

In short, anything and everything that adds to his proper self confidence and takes his attention from himself will increase the child's ability to make a good adjustment in September. So much depends on this happy adjustment, especially for beginners, that parents might well consider this a time for tactfulness and forethought. Their levity will be more appropriate at a less critical period.



THE HEALTH CHASER

By THURMAN B. RICE

The hapless, hopeless hypochondriac chases an elusive rainbow of health. The wise man finds health as a by-product of sane, purposeful living.

IT IS NO compliment when it is said of a man that he is looking out for himself first. And why not? Is that not the philosophy of the modern world as illustrated by its most "successful" men and women? And is it not true also that the aggressive world of which we were so proud a few short years ago is hanging on the ropes at the present moment?

The same fundamental error that has brought about our distressing social and economic condition has likewise misled millions of seekers after the elusive thing that is called health. Those who chase it the hardest find it the least. The individual who tries every fad that promises to lead straight to the Fountain of Youth, who analyzes every little ache and pain, who inspects every morsel of food as if he were the King's Taster, who never forgets himself or herself for a moment can hardly be a happy person, nor can he or she be an interesting or an attractive person. We like people who are interested in us, in other people and in things. The chap who is interested only in himself can hardly expect other people to be interested in him—except as a pathetic specimen of introversion.

Two men go to their respective beds. One of them recalls the events of the day and looks forward to the morrow. He thinks for a little while of his friends, of his family and of his affairs but is soon asleep. The other man retires wondering whether he can sleep and whether his dinner will digest. He listens to his pulse as his head rests on the pillow. What's that? Did his heart skip a beat then? Can it be that the loudness of the beat is due to increased blood pressure? He remembers that he is approaching 45 and that such things can happen. Should he cut down on his eating? Is he working too hard? Should he have a complete going over? Soon he begins to wonder if he is ever going to sleep or if he should "take something." He tries this and that psychologic stunt to suggest himself to sleep, but by the very effort he keeps himself awake, until worn and haggard he finally sleeps from sheer exhaustion.

The same two men sit down to the table. The first one eats everything in sight, laughs and talks with his friends or the family, enjoys the food and the surroundings, brags of the pie and kisses the cook. The other wonders if the eggs

have been boiled exactly the right number of seconds; he pushes back the salad when he finds that it has an oil dressing; he politely—when he is away from home—asks the hostess if he may have dry toast instead of the hot rolls. But we need not describe him further—he is well known to his friends as one who is finicky and "hard to cook for." As a week-end guest he is a "pain in the neck." And, girls, do be careful if you should ever see the love-light in his eye. You might in a moment of despair get the idea that he is the Last Chance. Really, it will be better to continue to eat the bacon and eggs alone.

So long as one has a job and does that job to the best of one's ability without feeling sad for oneself because one must work; so long as one has children in whom one is more interested than in oneself; so long as one has a husband or a kitten on which to lavish the care and affection that otherwise might be wasted on oneself; so long as there are books, and things, and problems, and people, it does seem as if one might find something more interesting to think about than whether or not one has had all one's vitamins for the day. Every young bride should be told that she will be much more likely to retain the love and kisses of Friend Husband if she will do something besides loll around trying to beautify herself. It is certain that as a steady diet he will cherish useful hands longer than beautiful ones. A man likes to do beautiful things for the Little Woman, but he likes to have her do beautiful things for him too. "All for one and one for all" is a better household hint than "All for one and one for one." Thee and Me are better company than Me and Me.

In matters pertaining to health the same fundamental principle holds, and it holds because it is fundamental. Two thousand years ago it was said that "He who seeketh to save his life shall lose it, and he who loseth his life shall find it." Here is the reason why children are so happy and carefree. They speedily forget their bumps and heartaches and then, of course, have them no more. It is said that women who bear children with the aid of certain anesthetics suffer pain in much the same way and degree as do women without the boon of such relief, but the difference is that the patient does not *remember* the suffering. She awakes without a memory of the dreaded ordeal and tells her friends that she suffered not at all. How foolish then are we when we mull over again and again the aches and pains of yesterday, and live and relive our long and dreadful heartaches a thousand times.

It is necessary, to be sure, that we shall give our bodies elemental care, but that doesn't take long. A few minutes a day or at most an hour or so a day should be enough. But there are those who primp and fuss with themselves the whole day through. They are on their way to a State of Health, but it isn't a State of Good Health or a State of Happiness and Satisfaction. The most fundamental error in the modern health program, in my opinion, lies in the fact that it tends strongly to make people introversive and introspective.

When the world is afire, when there are persons starving for love and attention, when there are myriads of persons suffering from strictly preventable diseases, when there are so many things to see and learn and do, when the destiny of nations and races and civilizations is hanging in the balance there are still women whose greatest ambition and desire is to lose 5 pounds of weight and men who spend hours training a moustache. A curse on them! But the curse is already on them. They have no better company than their own stupid selves, and after having seen some of them I should say that is pretty bad punishment.

The physician who thinks first of his fee and of his own welfare and convenience is a quack and is unworthy of the great profession to which he is supposed to belong. The minister who clips his preachments to suit the influential trustee in the front pew is a craven hypocrite who does not have the admiration of the influential pewster, to say nothing of the rest of the congregation, his God or most of all himself.

And so with each of us in the quest of health! Health is an elusive thing which is more likely to come to you when you are pursuing something else than it is to be captured by a direct attack. It is a by-product of sane and purposeful living.

It is one of the paradoxes of life that there is nothing so dangerous as being absolutely safe, nothing so unhealthful as having consideration for nothing save one's own health, and no one so unhappy as he or she who seeks nothing but his or her own selfish happiness. Strange, is it not, that even for Me, Thee is more important than Me?

What Can Be Done for Arthritis?

By M. H. DAWSON

BEFORE learning what can be done for arthritis it might be well to know exactly what is meant by arthritis. Literally it means inflammation of the joints. There are many different kinds of arthritis, and treatment depends on the type. Just as a headache may be caused by indigestion or by eyestrain, so the symptoms of joint pain may be caused by a variety of diseases, such as tuberculosis, gout, rheumatic fever or venereal infection. The treatment of such cases of arthritis is naturally dependent on the treatment of the underlying disease. However, these forms of arthritis are relatively rare and bear little relationship to the two main types of arthritic disease which I wish to discuss.

The two great groups which together comprise over 70 per cent of all forms of joint disease are osteo-arthritis and rheumatoid arthritis. These two forms of arthritis are separate and distinct diseases. Except for pains in the joints, which are common to both, the general symptoms are different; the course which each takes is different, and the treatment is radically different.

In a well nourished person between 45 and 60, especially a woman who has just passed through the menopause, complaint of pain in the spine, hips and knees, the weight-bearing joints, and swelling of the end joints of the fingers indicate osteo-arthritis.

If you have osteo-arthritis, the first thing you must do is to take heart and be reassured. Your general health is excellent, and your symptoms are really due to a premature aging of the joints which has nothing to do with general old age. Patients with osteo-arthritis live to be quite as old as those who do not have this disease. The arthritis itself will not become extensive; the pain in general will tend to decrease, and you will not suffer any serious disability.

Your treatment consists of four things: First, if you are even a little overweight, you must reduce; in so doing you will ease the strain on your weight-bearing joints. Second, use any kind of physical therapy ordered by your doctor that gives you relief from pain. Heat, massage and hydrotherapy are usually the most effective. Next, be faithful in the use of the medication which your doctor orders. Last, *rest* the affected joints as much as possible, and *don't worry!* Above all, don't rush impetuously to have your teeth or tonsils taken out just because you know some one else who did.

Let me now draw another picture, a picture of a patient with a typical rheumatoid arthritis. The chances are three to one that the patient is again a woman; but she presents a striking contrast to the osteo-arthritic sufferer. She may be anywhere between the ages of 20 and 60, but instead of being well nourished she is thin and chronically ill. The onset of the disease may have been sudden with acute pain and swelling of the joints; but more probably it began gradually, a slight attack followed by a free interval and then further attacks of a more severe nature. The middle joints of the fingers were perhaps the first to be affected; but as the disease progressed, many other joints became involved. In addition to pain, swelling and stiffness of the joints there was a slight fever which was followed by loss of strength, loss of weight and a state of chronic illness.

This patient is suffering from rheumatoid arthritis, the disease which causes more pain and suffering than all other forms of arthritis combined. In its extreme form it leads to distressing deformities and pitiful crippling. In mild cases the patient may recover more or less completely after a single attack. In general, about 30 per cent of the patients recover; about 40 per cent improve sufficiently to carry on with partially restricted activities, and the remaining 30 per cent become more or less permanent invalids.

And now what can be done for rheumatoid arthritis? In the first place, early diagnosis is important, for if the correct treatment is started at the onset of the disease, the chances of recovery are ever so much better. Rest is the most important feature of this early treatment. Rest is as important in the treatment of rheumatoid arthritis as it is in tuberculosis, rest for the body as a whole and rest for the inflamed joints in particular. It was once a popular idea that arthritic persons must be kept on the move to prevent their joints from becoming "set." This notion is utterly false and has caused more suffering and crippling than it has ever prevented. The soundest procedure is to rest the joints in light splints of plaster or

aluminum. Once or twice a day, however, each joint should be put through as complete a range of movement as possible. This should be done gently, preferably following a warm bath.

As to the removal of foci of infection, great caution is urged. Until quite recently all possible foci of infection were instantly attacked; teeth and tonsils were ruthlessly removed; the appendix, gallbladder, cervix or prostate were considered as possible danger zones. Medical opinion, however, has now become much more conservative, and it is considered good practice to remove only those foci of infection which are a menace to the patient's general good health. In particular, routine extraction of all dead teeth should never be permitted. Thousands of such teeth are needlessly sacrificed each year.

There is no specific diet for rheumatoid arthritis. Patients with this disease are usually undernourished, anemic and chronically ill. Their diet should there- *(Continued on page 823)*

SHE IS IN A STATE OF CHRONIC ILLNESS WHICH IS ACCOMPANIED BY A LOSS OF WEIGHT, SLIGHT FEVER, PAIN AND STIFFNESS AND SWELLING OF THE JOINTS.

CHILDREN WHO LIE

By EVERETT S. RADEMACHER

THERE IS perhaps nothing that gives a parent such a feeling of despair as the realization of the child's tendency to falsehood. It is an exasperation when it is marked in a younger child. Its frequent occurrence in the juvenile adds to that parental exasperation; the parental irritability frequently spills over, and tongue lashings, whippings and deprivations begin to make the home a place of general tumult. When this habit continues into the adolescent ages then particularly do the adults worry, for they are sure that the tendency forebodes a dire future.

It is a perplexing problem. Frequently parents remark, "He even lies about things when there isn't the slightest reason in the world why he should!" Others will tell of the difficulties in which they have been involved with neighbors and friends as a result of the child's twisted slant of the facts. More distressed are those parents who find themselves placed in an embarrassing position with the school teacher or principal as a result of the child's fabrication. On more than one occasion the result of such an episode has led to an embarrassing and irritating investigation of the home by a school nurse or a social worker from the bureau of child welfare.

When, in their efforts to curb this habit, parents confront the child with the facts, hoping to gain an admission of guilt from him, it is vexing to find only a negativism or a continued prevarication that often soars to even greater heights. It is tantalizing, too, for those parents who through their very common sense do not merely suspect a falsehood but definitely know there has been one, to endeavor to make the child tell the truth. They start out calmly enough; but as their effort through kind and serious talk fails and the child swings first on one foot and then on the other, seemingly indifferent about the incident, the exterior calm is exploded in a frustrated accusation and a storming tirade. They have not succeeded in getting the truth. They have failed to make the child say that he has told a falsehood. The failure in obtaining an admission of guilt from the child acts as a direct insult to the parental ego. This sometimes is much more of an impelling reason for bringing the child to the psychiatrist than is the habit of lying in itself.

Disturbed, perplexed, anxious as to what the future will hold in store for one so lacking in integrity, the parents bend their efforts to curb this awful trait. Unfortunately the effort that is expended is often one of the forces that help to keep the child stimulated to his task. Reflect for a moment on the scene of the parent, stern and serious, going through the process of trying to wheedle the truth from the younger one. The parent's very attitude shows the concern he is trying so hard not to exhibit. He probably starts telling the child that if he tells the truth there will be no punishment. This in itself is enough to let the child know that he is the person in command of the situation; that he has the upper hand. What grown person does not like to prolong those occasions wherein he is the ringmaster? It is just as true with children. There is, in fact, even greater satisfaction that comes with the knowledge that it is a big and important adult person whose time and attention is being consumed.

The scene continues. The child at first seems serious, then perhaps becomes coy, then changes to a show of unconcern. With each changing attitude and verbalization, each just as far from the truth as the first, the parent's impatience mounts. The child senses the growing irritation. His next move will be a bit of conversation which as it starts actually seems as if it would be the truth at last. The parental ire recedes somewhat, only to reach new heights when the parent finds that he has been fooled again.

And so it goes. The scene may actually end in a spanking of the child, but the child has not made any admissions of his errors. There will follow screaming, perhaps even kicking, and finally the child is left alone. The parent remains with a grim anger. Probably this will be followed with a general rejection of the child and even a disdain toward many of the things to which he is applying himself. With such a state as this existing the only thing left for the younger one is to find some new incident which can be falsified.

A YOUNGSTER SUCH AS THIS ONE, LIVING TOO MUCH IN THE WORLD OF DAY-DREAMS AND MAKE-BELIEVE, SEES LITTLE DISTINCTION BETWEEN THE REAL AND THE IMAGINED. HE NEEDS TO HAVE REAL FLESH AND BLOOD PLAYMATES.

In other words, the fact of the method of dealing with these situations is often an underlying reason for their continuance. There are, however, many aspects of the whole child guidance program which have led to the development of this behavior disorder in children.

All people indulge in daydreaming. Little toddlers are particularly susceptible to reveling in fantasy. The lonely child will fantasy his playmates. He will create many new worlds about him. Often he will spend much time living with his daydream friends. Sometimes he becomes so engrossed that it becomes hard for him to distinguish between the real and the imagined. Here is a child who needs playmates. In some instances of this kind even more parental attention of a play nature would be of extreme value in fitting the child to his reality. Many times, parents become unduly alarmed over the child's seeming preoccupation with daydreams. They have felt the buffeting of the world and have perhaps become somewhat bitter as a result. Naturally they curb in a sharp manner any accounts which the child attempts to explain about his imagination world. The little one is left with even greater insecurity and steeps himself more deeply in the kindly attitude of understanding which his fantasy life holds for him.

It is true that for adults, fantasy must not disregard fact or become a constant substitute for action. Yet fantasy is often helpful for all people and is not necessarily a sign of the beginning of one of those "dreamer types" of adults who never succeeds in doing anything. Let the child enjoy a little fantasy. He probably needs it in the same way that the grown-ups do when they have met with some disappointment.

Then there are those parents who themselves directly lie to the child. They do this in what they believe to be a spirit of kindness. For example, the parent is about to leave for an afternoon of bridge. The child begins to show a tearful countenance. The parent, wishing to

reassure him, pats him on the head, smiles and says, "Now be a good boy. Mother will be right back." The child waits for hours. It is from such situations as these that he learns that subterfuge has values.

There is another type of direct lying in which the parent indulges in order to cover up his own embarrassment. This is particularly likely when the child begins to question about personal things of the home, things which later he comes to realize in their true light. Questions on sex are especially liable to be met by the parents with deception. In this field some of the parental responses are also made with a great deal of fervor which in itself helps to fix the incident in the child's mind.

Fear that responding truthfully to certain topics will lead to the child's repeating stories in the neighborhood frequently causes parents to give vague explanations which are recognized by children as not being quite truthful.

There are many instances in which the parent constantly uses a type of falsehood which he does not recognize. Promises and threats as disciplinary means afford a flagrant example of such lying. The child sees the actual example of untruthfulness in their use and therefore feels some sanction in his own use of falsehoods, particularly if it may keep him from getting into trouble.

Exaggeration is a form of lying. Here the child often learns much from parental example. The parent recounts to a friend some simple episode of the home life, and the child listens. Soon there is a vague recollection that it is the simple incident which took place the other day and in itself was a simple thing, but by the addition of a little coloring a much better effect is created. Again he learns and realizes that the right effect may bring for him sympathy or recognition even though he may deserve criticism.

Sometimes the parents' effort to learn too much about the activity of the child becomes such an annoyance to him that he is perforce driven to falsehood in order to escape such grilling. The persistent, "Where have you been?" "What did you do?" "Is that all you did?" becomes both a source of annoyance and a factor in making a child feel uncertain of himself and rather guilty even over perfectly acceptable kinds of behavior.

A greater influence of the same nature is constant anxiety on the part of the parent. With such an emotional sickness one's concern over trivialities is most intense. The tendency to interpret incidents in an extremely personal manner is also heightened. Even the fact of playmates' returning to their own homes will be viewed as having some hidden anxious concern. The parent will begin questioning, "Why did they go home?" "What did you say to them?" "Why did their mothers want them to leave?" There will be a shaking of the head and an assurance that the child is withholding the truth. So great becomes the pressure that the child has to begin to think up lame excuses in order to escape the barrage of questions which are directed to some really simple cause.

Suspicion brings another emotional state, and the parent plies the child with questions over some small incident. Here, too, finding his first simple yet truthful explanation not accepted, the child must resort to lying to escape parental wrath. He has to do this because if he continues in his first story, he is contradicted; if he tries to leave his parent's presence, he is jeopardizing himself, and if he

CHILDREN'S LIES

"Don't lie to me, Willie," says Mother. Willie scarcely knows what to answer as his eyes become moist and his cheeks red.

Many parents think their children lie and may accuse them of it, when the youngsters are telling the truth or stating the facts as they know them.

Lies have purpose and are intended to deceive in order to attain that purpose. A child knows better than his parents when he lies. The parent fears lying as he does not wish to be deceived, lest his child think him a fool.

Children are held under suspicion by parents who know that they themselves do not always tell the truth. In fact, most parents regard lying as a social necessity under many circumstances. They know the meaning of the white lie of convention, the broken promise, the lie of vanity, the genial lie direct. They also know that, despite all theory concerning the importance of truth, falsehood plays a part in lessening the friction of practical life.

Sensitive to the value of the truth, parents are ever on the look-out for their children's disregard of it. They know their own possibilities when hard pressed for the unwelcome truth.

Lying is used for advancing or protecting the self. Children, like adults, seek to secure pleasure and escape pain. Like their parents, they wish to avoid personal discomfort and unhappiness. Thinking of their own welfare they often distort facts. Out of regard for the happiness of their parents, they may deem it wise to deny what they know to be the truth.

Parents are concerned with truth and falsehood because they wish to teach the nature and meaning of truth as a social habit. They also desire their children to learn the hazards of lying. Children's lies test the value of telling the truth.

—By IRA S. WILE

becomes angry, he is certain that he will be whipped.

In order to help a child who has developed a strong tendency to falsehood, the whole psychology of the home must often be changed. By the time the problem reaches such proportions that the parents actually bring the child to the psychiatrist the whole emotional attitude of the home is markedly altered. The discipline of the home has become inconsistent and highly emotional. The child has probably felt long periods of being rejected and disliked. The parents have felt vindictiveness and have rationalized the severe punishment they have meted out. They have also felt remorseful over the same problem. They have offered rewards, made impossible threats and shown inconsistencies on every occasion.

It is important to see what the lying really means. Whenever the child resorts to this type of behavior to an extreme degree, it is well to pause and try to consider other aspects of his life. Is he getting any other recognition and satisfaction in his home? Is there a real pleasure and a real feeling "of belonging" in his group associations? Is he in a school grade in which he can compete with at least a fair degree of success? Is he placed under constant pressure in regard to his school work? Look to factors in his interests in the home. Help him with his activities with the other children. Then consider the way he is being governed at home. Determine whether, in your preoccupation with the difficult affairs of running a home, you have not been meeting his needs with evasions. If so, discuss these things with him. Then plan a change for your mutual advantage.

Do not be so concerned that you press him constantly over every little detail of his life. Certainly do not continue those prolonged sessions of trying to extract the truth. It would be much better to ignore the incident completely than ever to allow so much emotion to be displayed. The placing of emotional premiums on this habit may be the very thing that helps the continued use of patterns of evasion.

[NOTE.—In the October HYGEIA, Dr. Rademacher will discuss fears in children.]

HEALTHGRAMS ✣ from Articles in This Issue

¶Health is an elusive thing which is more likely to come to you when you are pursuing something else than it is to be captured by a direct attack. *See page 784*

¶The occurrence of sinus disease appears to be inversely proportional to the intensity and prevalence of sunshine in any community. *See page 794*

¶Often it is not the lack of intelligence that is responsible for a child's academic failure, but the lack of proper habits of eye movement in reading. *See page 811*

¶Perhaps the greatest source of confusion in this whole changing, unsettled picture of adolescence is the uncertain status of the youth in the rapidly expanding world in which he finds himself. *See page 778*

¶Mothers seldom recognize that in forcing a child to eat an item of food to which he has objected, they show stubbornness far less justified than that of which they accuse the infant. *See page 805*

¶Whenever the child resorts too often to lying as a form of behavior, it is well to pause and try to consider other aspects of his life. *See page 788*

¶Habit is a powerful factor in eating, and the child who is rescued from the humiliation of fat by a wise mother who establishes the right eating habits for that child's particular needs is not likely ever again to develop wrong eating habits. *See page 801*

¶Overwork and overstrain lead to physical or mental breakdown; yet, paradoxically, idleness can lead to the same results. *See page 797*

¶There is so much dependent on a happy adjustment to school life, especially for the beginner, that parents might well consider this a time for special tactfulness and forethought. *See page 781*

¶No wise parent will ever attempt to make his child conform to the routine life of the multitude if he is honestly one of the elect; genius walks alone, proudly and happily. *See page 818*

¶No medicine or drug has yet been shown to influence favorably the course of rheumatoid arthritis; drugs are given to relieve pain. *See page 786*

¶There is no question but that a critical analysis of the American diet should be considered in the cause and cure of cancer, but this may take many years and a good deal of patience. *See page 792*

From "Pathfinders in Medicine"

GALEN, A SECOND CENTURY PHYSICIAN, WAS ONE OF THE FIRST TO ARGUE THAT DIET COULD PREVENT CANCER—AND THE DEBATE STILL RAGES.

Can Diet Influence Cancer?

WE HAVE always had faddists and alarmists in the matter of diet from the beginning of the Christian era. As early as the second century, Galen, a physician who lived from 131 to 201 A.D., stressed a special diet for the prevention of cancer and prohibited the taking of vinegar, wine, cabbage, aged cheese, walnuts and pickled meats, particularly goat, deer and rabbit. Permissible foods were vegetables, milk, veal, fowl, oysters and light white and red wine. Between this period and the fifteenth century nothing notable was recorded on the subject of cancer and diets. Paracelcus (1493-1541) succeeded in overthrowing the Galen theories and held that cancer is the result of an excess of salts in the blood. He gave various medical preparations as treatment.

In 1809 Dr. William Lambe of England came to the remarkable conclusion that cancer is caused by the drinking of too much water. Then there were practitioners in Europe in the middle of the nineteenth century who actually contended that mere abstinence from food would cure cancer, and Pouteau boasted that he cured several patients by limiting their nourishment to five or six pints of ice water daily for a period of about two months.

Dr. Oliver Pemberton, surgeon to the General Hospital in Birmingham during the year 1867, argued for proper elimination by dietary measures and not by drugs to alleviate suffering and improvement of cancer. In addition to this he advised the consumption of an abundance of certain foods: milk, fresh meats and eggs.

Mustard eaten in excess caused much cancer among the agricultural laborers of England, according to a statement made in 1883 by Dr. H. L. Snow of the Cancer Hospital at London, England. In 1896 Dr. A. Rabagliati published a treatise in which he concluded that cancer is caused by the eating of excessive quantities of starches and sugars.

In 1907 Dr. John Shaw of the Royal College of Surgeons, England, enumerated the following dietary errors which he claimed led to cancer: deficiency of vegetable foods, especially of those containing sulfur, such as peas and onions; excess of animal food and the abuse of alcohol, tea, tobacco and drugs.

However, in 1911 Dr. Eli G. Jones of the New Jersey State Eclectic Medical Society came to the conclusion that tomatoes had a curative effect in cancer. In 1923 Dr. Alfred C. Jordan published in London, England, the following dietary principles in the form of commandments for prevention of cancer: Eat live foods, eat laxative foods, avoid foods that decompose readily in the bowel, and avoid foods and drinks that irritate the intestine. By live foods Dr. Jordan had reference to milk, cream, butter, cheese, fresh vegetables, fresh fruits and nuts. Laxative foods include fresh fruits and vegetables. The foods that decompose readily are meat, including fowl and game, and sugars. Fresh fish was allowed, but pickles and alcoholic beverages, which irritate the mucous lining of the stomach and intestines, should be avoided.

Dr. Robert McCarrison, a British army surgeon, stationed for a number of years in a remote region in the Himalayas as surgeon and laboratory investigator, was particularly impressed by the health and long life of the inhabitants he treated, although they lived under the most insanitary conditions. He stated that during the period of his association with these people he never saw a case of dyspepsia, stomach or intestinal ulcers, appendicitis, mucous colitis or cancer, although his operating list averaged 400 major operations a year. In his studies of the cause of this remarkable immunity, Dr. McCarrison was convinced that the use of natural foods, milk, eggs, whole grain cereals, fruits and leafy vegetables protected them against infection.

The various hypotheses of medical practitioners from the earliest civilization were in the main scattered observations of small groups. Not until the year 1935 did the figures assume significance; at that time Dr. D. T. Quigley published a paper in the July 1935 number of the *American Journal of Roentgenology and Radium Therapy*. The investigation of Dr. Quigley covered a period of ten years and included 2,707 patients. He found that all patients were on more or less deficient diets. The deficiencies were in calcium, iodine, iron, vitamins and roughage. Ninety-five per cent of the patients suffered from constipation or from some form of stomach or intestinal disease. For the whole group the amount of vitamin-containing foods fell as low as 3 per cent in some cases, and in none did it rise above 25 per cent. The average for the entire group was 8.5 per cent. With change in diet, improvement in patients resulted.

For the student seeking scientific and factual information the new book by Dr. Frederick L. Hoffman, "Cancer and Diet," published by Williams & Wilkins, is also going to prove confusing. Dr. Hoffman has been for many years statistician for the Prudential Insurance Company. In 1933 he interested Mr. Fels of Philadelphia to undertake an investigation on the relation of diet to cancer. The study was based on several thousand questionnaires. Quantitative index was not taken of the foods consumed or of the total calories eaten daily. The cancer victim was asked to answer whether he ate "none, little, much or very much of beans, spinach, meats, milk, eggs, candies, etc." This is strangely reminiscent of the frequently observed fact that the overweight woman who is seeking a remedy to reduce always insists that "I eat so little and still I gain." Then on a careful check-up it is found that she frequently eats between meals, sandwiches and sweets at bridge luncheons and more food at evening parties, so that her total daily calorific intake may be considerable. It is needless to say that the rough estimations of such bulky information are little short of guesswork, and yet the final conclusion from the data assembled was that cancer is produced through overnutrition.

In 1809 Dr. Lambe said cancer was due to drinking too much water. A century later (1910) an attempt was made to correlate the excessive consumption of table salt and cancer. This idea gained a foothold in California, so that some Californians imitated the Eskimo and went on a salt strike, finally shunning the salt shaker.

The statement made in a recent American magazine that cancer is most prevalent in areas where milk is most abundantly consumed is typical of some correlations postulated in cancer literature of earlier years. The editor of *The Journal* of the American Medical Association in the issue of March 13, 1937, answered this as follows: "It may be easily shown that life expectancy is longer in the states using most milk, because of better nourishment of those states."

There is no question but that a critical analysis of the American diet should be considered in the cause and cure of cancer, but this may take many years and a good deal of patience.

By BARNETT SURE

SINUS DISEASE

Civilization, the great coddler of the human race, exacts penalties for progress. Among them LEWIS J. SILVERS lists increased intensity in sinusitis

CONSIDERABLE PROGRESS has been made in the past decade in understanding the causes and in the method of treatment of sinus disease. So common is this affliction in our so-called temperate climate that some authorities state that four out of every five of us suffer from a sinus involvement sometime during our life span.

Sinus disease, though as old as the human race, has definitely shown a marked increase in intensity with the development of civilization. Lowered immunity due to a more coddled form of existence has unquestionably played a prominent rôle in furthering nasal and paranasal afflictions. Refined foods lacking in their natural vitamin content and the anxiety and hustle that accompany our daily civilized routine have done much to increase its incidence. Other important contributing factors are our crowded surroundings and confined mode of living. The occurrence of sinus disease appears to be inversely proportional to the intensity and prevalence of sunshine in any community.

The artificiality of the struggle for existence plays a most important rôle in the increased incidence of sinus disease among the urban population. The dirt and dust churned up by the incessant stream of traffic in any of our large cities amounts daily to more than a large tablespoonful when gathered in a Petri dish. Those living in sparsely settled regions, the savage of the tropics, the mountaineer, and even the Eskimo in the frozen wastes, are less subject to sinus disease due to irritation and the resultant infection.

Anatomically, the head contains four pairs of air cavities, commonly called sinuses. Each sinus opens into the nasal passage and is contiguous with the mucosa of the nose. A turbinate body, or concha, guards each orifice and is protective against dry, cold and polluted air. The spongy turbinate, rich in blood vessels, moistens, warms and filters the air we breathe. Under ordinary conditions the nose should be free to the intake and outgo of air. When swelling of the mucous membrane occurs from any cause, the ventilation of the sinuses is interfered with and obstruction to drainage is bound to follow. Since the sinus mucosa is continuous with the mucous covering of the nasal passages, the diagnosis of sinus disease is usually quite simple. The picture revealed by the examination of the nose, both from in front and in back by means of electrically reflected light, tells the doctor what is happening in the remote recesses of the air cavities.

Besides the physiologic functions already described, the paranasal sinuses have also two other important functions. Substituting air space for solid bone they render the head more manageable by increasing its lightness. The air cavities also act as sounding boards and increase the resonance of our voices. Frequently the voice of a sinus sufferer sounds flat and nasal.

The nasal examination is usually followed by shining a small, penetrating light through the bone at the roof of the mouth. This means of transillumination is used to determine whether the sinuses are clear, translucent or opaque. Opacity does not always imply that pus is present. Marked thickening of the mucous covering of the wall of the sinus due to severe, acute or chronic inflammation may be sufficient to occlude all light. An x-ray examination is then required to help the physician distinguish between thickened sinus wall and free pus which may fill the cavity.

The commonest type of sinus disease is that which complicates the ordinary nose and throat infection. A protracted "head cold" in an individual with mechanical nasal obstruction leads inevitably to a sinus infection. The sinus involved will depend on the location of the obstruction and the resultant interference with drainage. Diseased tonsils and adenoids and chronically infected lymph follicles in the back of the nose and throat must be sedulously removed. Electrosurgery here comes to our aid and concomitantly sterilizes the tissue while destroying it. An autogenous vaccine reaction is set up by the end-products of the superheated bacteria, and the defense mechanism of the body is stimulated. Thus is avoided the extra expense and discomfort of a course of autogenous vaccine injections.

Of the noninfectious types, the allergic or sensitivity type seems to be on the increase. The attacks may be seasonal, if pollen borne, or perennial, if dust borne. Animal emanations, as for example horse, dog or cat dander, may also be the offending substances. Either total avoidance or desensitization by a course of injections is necessary to effect a cure.

Then there is a variety of sinus trouble which is most prevalent during the winter season when homes and offices are overheated and drier

even than the Sahara Desert. The vasomotor types here play an important rôle. Extreme dryness and dust are the arch enemies of most sinus sufferers. When the blood supply to the mucous membrane of the nose is impaired, then the diverse irritants play havoc with the sinuses. The moist sinus type does best in a dry atmosphere; whereas the dry sinus variety requires a moist equable climate.

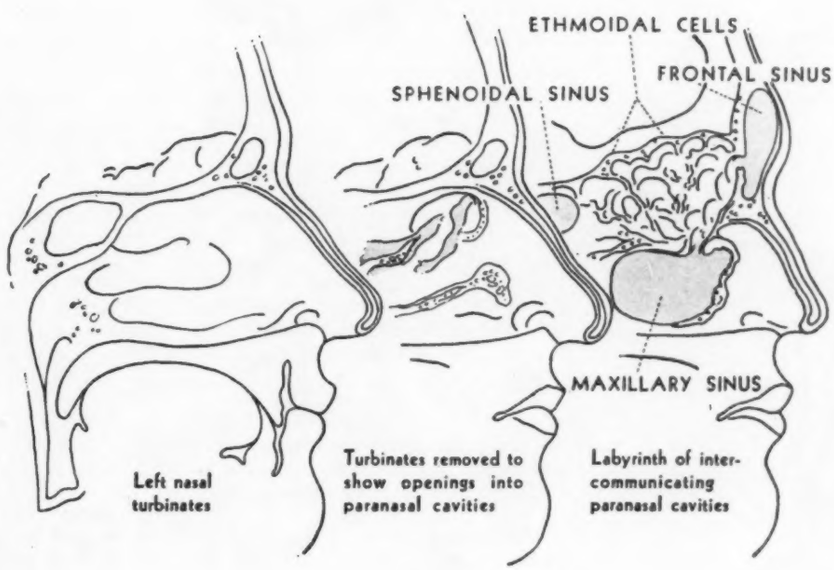
In the past few years, as knowledge of nutritional deficiencies has increased, a marked improvement has been noted in patients following a proper dietary regimen. Thorough cooking and refining of our foodstuffs have destroyed those essential substances without which health is impossible. The vim and vigor of our children of today who receive a properly balanced diet are well known to all of us. Where diet is restricted to the whims and likings of the individual, where an excess of a delectable food is engorged at the expense of a less tasty but more essential foodstuff, the functions of the organs are impaired and the body in general must suffer.

Metabolic disturbances or difficulty of the body to assimilate or prepare properly certain substances for absorption is frequently noted even where a balanced diet has been prescribed. Impairment of the glands of internal secretion may be a factor to contend with in this type of case. Supply the glandular substance which is lacking, and the sinus involvement promptly shows signs of improvement. For example, we may note that calcium and phosphorus are assimilated only when the hormone of the parathyroid glands functions properly as in the presence of vitamin D. If an abundance of vitamins B and D in the form of irradiated yeast is supplied, a change takes place in the physiologic functions, simulating the action of a catalyst in a chemical reaction. These, of course, are procedures for the physician, not the patient, to undertake.

A state of anxiety due to our present mode of living generally complicates a large percentage of the nasal and paranasal disturbances. Unhealthy mental fatigue rather than healthful physical exertion appears to be the present vogue. Insecurity, in all its devious forms and with its baneful effect, must be combated to ensure success and permanence in the cure of any disease.

The treatment of sinus disease will then be found as varied as the causes of the disease. After the diagnosis is established, the primary causes are first tackled. In acute sinusitis the swelling of the nasal structures is temporarily reduced by the application of tampons and infra-red exposure. Drainage is reestablished, and provided the infection is mild and short lived, no other form of treatment is required. However, should an acute sinus infection con-

TURBINATES and SINUSES



tinue unabated for six weeks or longer, then more active relief is indicated.

If it is definitely established that the cause of the trouble is some foreign protein as in allergic sinusitis, the offending irritant must be removed. If that is impossible, as in the case of house dust or plant pollen, a course of desensitization injections is given. Ionization treatments are often used in addition to injections. In hyperesthetic or vasomotor rhinitis, in which the mucous membrane of the nose swells from the slightest temperature change or irritation, chemical or physical means may be used to restore the tissue to its normal state. Ventilation and drainage must be established permanently to be of curative value in sinus disease.

If infection of the tonsils or nasopharynx exists, a thorough clean-up of the offending tissue is of paramount importance to insure a lasting cure. Infected lymphoid masses often are seen after tonsillectomy, both in the back of the throat and in the nose; these may be removed by the more modern method of electrosurgery. Each treatment with the electrosurgical current destroys myriads of bacteria which send off their end-products into the lymph stream and thus produce a reaction analogous to a vaccination with a culture made from one's own germs. This often accounts for the relief from major symptoms long before the total eradication of infection. Gold quartz or applications of ultraviolet light within the nares and adenoid region have a multifold action. The biologic effect of the particular wavelength used increases phagocytosis and so hastens the absorption of the harmful products of inflammation. An astringent action increases the resilience of the mucous membrane, helping to shrink the boggy, engorged turbinate tissue. A bactericidal action causes a liberation of the end-products of dead and attenuated bacteria, thus stimulating the defense mechanism of the body. This acts like an autogenous vaccine reaction and imparts immunity to the sinus victim.

Deep, penetrating, thermic treatment by means of the long or short wave diathermy is most efficacious after ventilation and drainage have been established. A simple apparatus for circulating hot water through rubber tubes placed high up in the nose is also helpful in restoring the mucous membrane to normal.

Ionization, or the passing of positive ions of a specific medication into the tissues of the nose and paranasal sinuses, has also a multifold action. Increase or decrease of blood supply locally is controlled by the polarity of the current applied. A response of the tissue, which generates a histamine-like substance, is responsible for the increase in the defense mechanism of the body. A definite bactericidal effect produced by ionization acts as an autogenous vaccine reaction and stimulates the defense structures of the body in general.

In conclusion, the treatment of sinus disease depends entirely on the specific causative factors. Infections are eliminated by means of ventilation and drainage by a conservative electrosurgical and thermic technic. Sensitivities to various substances are treated by injections and ionization. Hyperesthetic or vasomotor rhinitis, the anlage of sinus involvement, is relieved by shrinking of the nasal turbinates, either electrosurgically or by means of phenolization.

DISCOVERY!

Columbus finds HYGEIA'S Isles of Health Lore.

Taking a hasty glance at the October map of contents, Christopher quickly sets his compass by the stellar islands of articles he sees therein.

The first isle of information he discovers he calls "Athletics Can Be Clean" [*Prof. C. O. Jackson*] because in it he finds practices going on among "Indian" athletes that should be cleaned up, as they are highly detrimental to their health.

Next he encounters "The Force of Fear" [*Dr. Everett S. Rademacher*] where he discovers what this emotion can do to the unfolding personalities of youth and the uncertain ones of age.

Continuing to navigate through these crystal clear waters of HYGEIA he lands on "Hygiene in the Home" [*Drs. J. C. Geiger* and *P. S. Barrett*] where he finds that cleanliness, like charity, should begin at home. A little more attention can be given to the assumed-to-be clean objects so often used, so seldom really washed.

Christopher next pauses in his explorations to care for a member of his crew who has become sick. Fortunately, however, he finds "Nursing in the Home" [*Edna P. Lewis, R.N.*] which he readily adapts to his needs. Though not an island of exceptional size, he finds such a great "store" of knowledge on exactly everything he needs to know that he almost decides to live there for good.

However, taking his trusty telescope in hand, he sees that there are other islands (or articles) just ahead that appear quite as promising as these. So, with a whoop and a blessing on his good fortune, off goes Columbus to sail the seas of HYGEIA.

SANE MANIAS

HOBBIES OF VARIED PERSONALITIES

By S. R. WINTERS

"TOO MUCH rest itself," wrote Pope, "becomes a pain"—a pain, however, which can easily be cured by having a hobby or favored interest aside from the conventional routine. The hobby may be as simple as collecting sea shells along the shores of beaches; as complex as building elaborate aircraft models, or as original as constructing churches from match sticks or carving birds out of a log of wood. However, it must be pursued by the hobbyist with zeal and delight, bringing him enjoyment, pleasure or gratification.

On the other hand, the hobby is equally important for hard working, overtaxed individuals. The secret of successful living does not lie in mere reaping of monetary and social gain as the fruits of years of worrisome occupational toil. The bigger loaf of bread is generally earned by persons who have otherwise enriched their lives by pleasurable and relaxing pastime, thereby attaining a more perfect psychologic adjustment in their professional endeavors. The noted Dr. Alexis Carrel, whose personal hobby is reading, has recently been quoted as saying, "Every man, woman and child must have some hobby to preserve and develop mental equilibrium."

Overwork and overstrain lead to physical or mental breakdown; yet, paradoxically, idleness can lead to the same results. For idleness generally breeds restlessness and morbidity; nerves do not rest when the mind is not healthily occupied. Successful persons seem to learn the importance of having hobbies early in life. It affords them balance, adjustment and energy which bring freshness, originality and animation to their work, ultimately setting them a jump ahead of the next man in their fields.

President Roosevelt, for example, burdened with the problems of a whole nation, leads an almost inhumanly active mental life. The fatigue of the President's routine is considerably lessened by his hobby interests. Mr. Roosevelt has the collector's instinct. He recently described his colossal stamp collection, which consists of more than 20,000 stamps from all countries, as "a hobby, a pastime and a recreation." Aside from his philatelic assortment the President also treasures collections of ship models and maritime prints.

All the Presidents realized the need for recreational outlets. For instance, Thomas Jefferson, whose avocation was his mechanical interests, was a creative hobbyist. His reseach led to invention of the swivel chair and copying press. Other Presidents were sportsmen. Riding and hunting were favored by Theodore Roosevelt. Howard Taft enjoyed swinging a golf club. Grover Cleveland, Calvin Coolidge and Herbert Hoover donned fisherman's clothes when they sought relaxation from political cares. Mystery books were a means of escape from affairs of state for Woodrow Wilson.

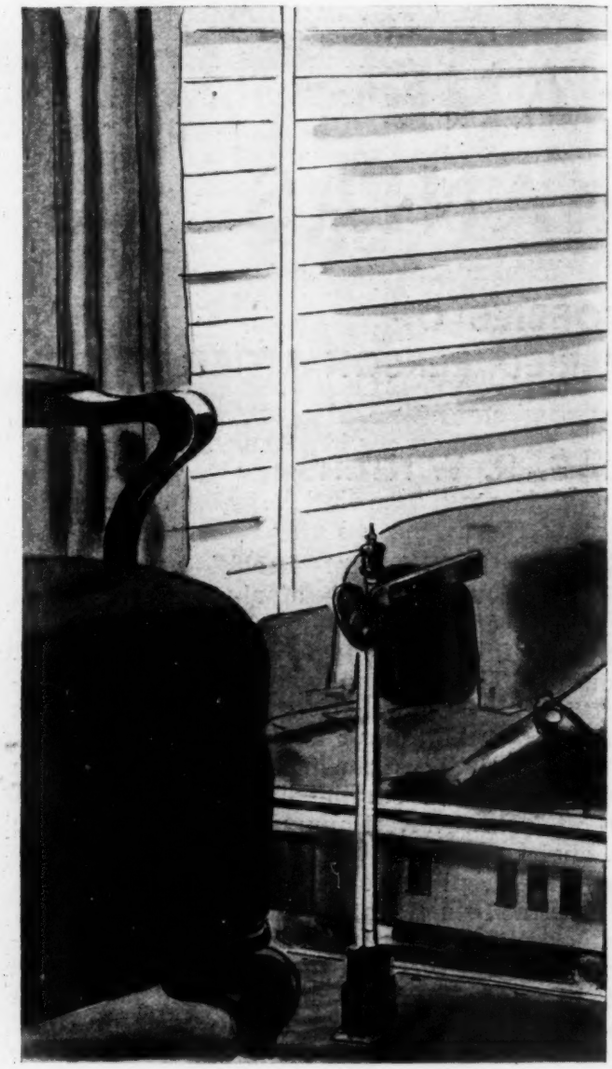
Most noted political figures have their pet hobbies. Postmaster-General James A. Farley is humored by collecting cartoons of himself. He tacks these on the walls of his Washington office. Miss Frances Perkins, a fellow Cabinet member, follows natural feminine inclinations in the choice of her hobby. The Secretary of Labor possesses one of the rarest patchwork quilt collections in the country. The Secretary of the Interior, Harold L. Ickes, like the President, is an ardent philatelist. Another enthusiasm of Mr. Ickes is the growing of dahlias. His pioneering with this flower led to the creation of a new horticultural species, further distinguished by receiving the first dahlia patent.

The Senators and Congressmen have their hobbies too. A noteworthy hobbyist among their ranks is Representative Hamilton Fish. Mr. Fish collects old American black glassware and has been making valuable additions to his collection for the past twenty-five years. Former Senator Harry Hawes of Missouri is interested in firearms. He is the proud possessor of a pair of Colt revolvers once owned by the notorious outlaw Jesse James.

A hobby has much in its favor and brings the maximum of satisfaction when it can lead to creative and financial success. The late C. Francis Jenkins, inventor of the prototype of the motion picture projection machine used today in theaters throughout the world, once wrote that nearly all inventions developed from hobbies. To prove his point he cited many mechanical and scientific inventions which originated during inventors' hours of relaxation. Eli Whitney, inventor of the cotton gin, the significance of which was important enough in this country to revolutionize industry, was by profession a cabinet maker. George Stephenson, who developed the locomotive, was employed as a coal miner in Wales. The telescopes of Herschel were made while he was earning his living by playing the violin at dances and concerts. Samuel F. B. Morse, by profession a

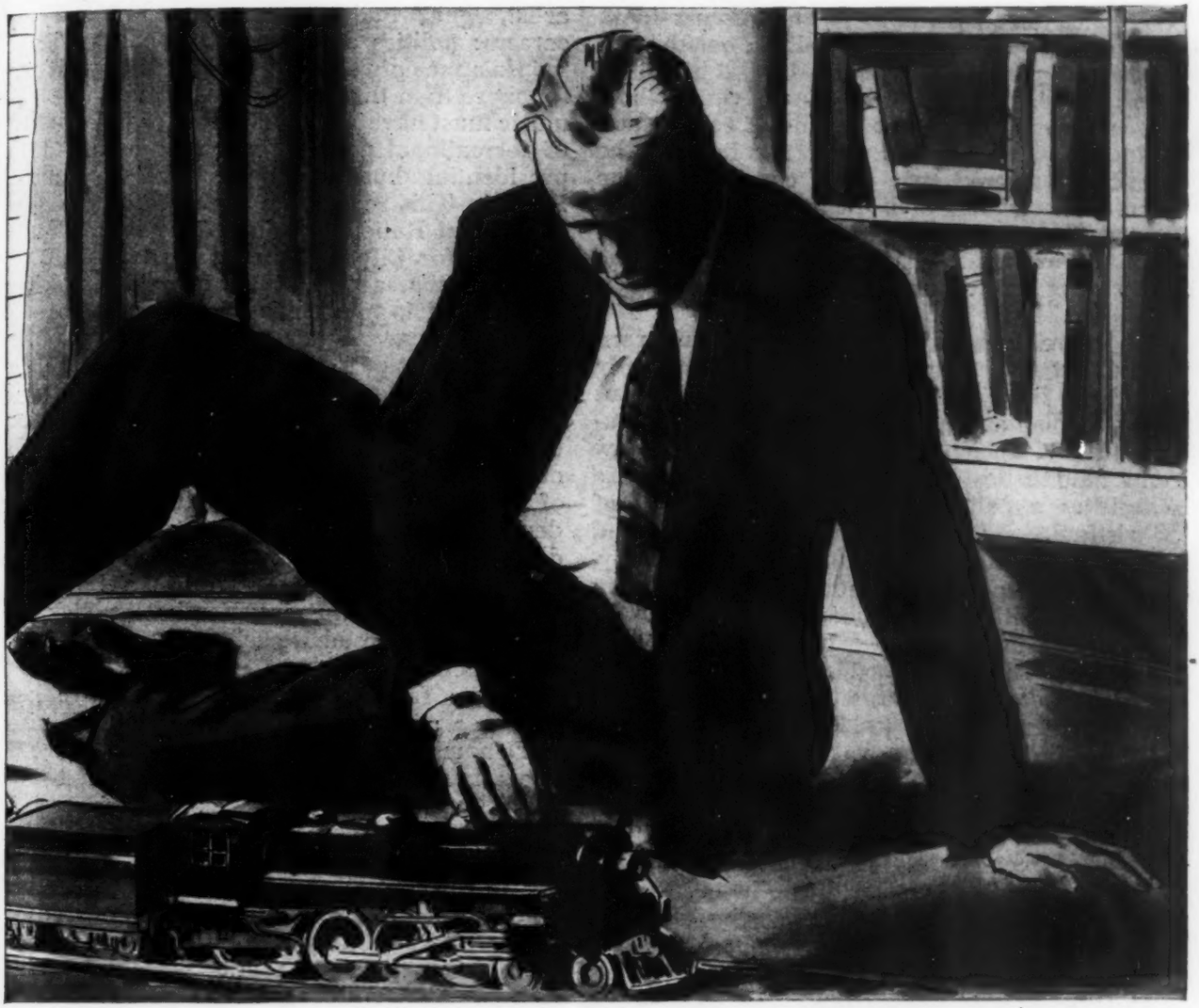
portrait painter, accelerated communication throughout the world by his momentous invention of the telegraph. The celebrated Wright brothers, Wilbur and Orville, both earned their livelihoods as bicycle repairers. In spare hours they made small "gliders" and flew them as a hobby. Now aircraft have nearly conquered a new domain. Professionally a school teacher specializing in tutelage of the deaf, Alexander Graham Bell became interested in the problem of sound. After school hours he made the first important contribution to sound, which later led to the perfection of the telephone. While Thomas A. Edison was employed as a telegrapher, he coordinated his knowledge and developed a telegraphy device on the side. This netted him a check for $36,000, thereby enabling Edison to spend his life at his hobby. George M. Westinghouse, who, like Edison, turned a hobby into riches, had been taught the trade of machinist. Mechanical things had always absorbed his interest. At the early age of 19 he invented a "frog" for setting back derailed cars on the tracks. At 21 he startled the mechanical world by producing the air-brake.

They all have hobbies. Selecting a random group of present-day prominent figures we find that Benito Mussolini, Italy's energetic leader, lessens the strain of political life by automobile driving; Josef Stalin, Russia's "man of iron," is a hunter; Adolf Hitler writes and reads books; Leon Blum, former French premier, follows the creative poetry muse; George Bernard Shaw turns from the pen to horseback riding; Lily Pons, whose own autograph is highly prized, cherishes a collection of signatures of other notables; the duke of Windsor, like his late father, is a philatelist; Eva Le Gallienne, off-stage, is a theater-goer; Charles Chaplin "keeps fit" by walking; New York City's mayor, Fiorello H. La Guardia, likes rough clothes and outdoor camping life, and Charles A. Lindbergh enjoys tinkering with mechanical appliances.



Every man has a hobby "to his own tastes." H. G. Wells, the English novelist and historian, who so vigorously advocates peace, prizes a collection of toy soldiers. Mr. Wells buys his miniature warriors unpainted and colors them in bright uniforms. Aldous Huxley, another literary contemporary, shares a hobby with Ed Wynn, the radio and theatrical comedian. They both save hats of all sorts. Mr. Wynn has more than 300 hats in his assortment. Gene Tunney, the pugilist, likewise noted for Shakespearean inclinations in literature, spends his odd dollars buying wallpaper. The banker Percy H. Johnson has an affection for canes, especially those formerly swung in the hands of famous persons. His collection includes a walking stick which was once owned by the Russian monastic, Rasputin, and a simple wooden cane from the home of Abraham Lincoln. Collecting handcuffs worn by condemned murderers is the weird hobby of M. A. Gill of Kansas City. Mr. Gill's variety contains links worn on the wrists of murderers dating back to the year 1620. An assortment comprising more than 1,000 pairs of cuff buttons of every conceivable type is the special "mania" which has brought joy for many years to Maurice Blumenthal of Brooklyn. The well known entomologist of the Department of Agriculture, W. R. Walton, pursues a hobby which falls in line with his science. Mr. Walton places insects, frogs, snakes and toads in metal casts, thereby reproducing perfect impressions of these species in molds.

Clock collecting, which seems a somber hobby, has been pursued by many well known persons. Gelett Burgess, the writer, has a half-dozen clocks in every room of his home. Both George III and George V of England loved the tick-tock of old clocks. Buckingham Palace contains a rare group of Thomas Tampion, Edward Banger, George Graham and Anthony Bannister clocks. Charles Mifflin Hammond, intrigued by the intricate mechanisms of clocks, purchased old models because of the happiness



he derived from toying with their works. His hobby was the source of the unusual collection of 153 clocks and 30 watches accumulated by him over a period of more than twenty years. Mr. Hammond donated his timepieces at the time of his death to the Essex Institute in Salem, Mass., for public exhibition. Major Paul M. Chamberlain of Newark, N. J., gathered a collection of more than 1,000 clocks and watches.

The advertisement of the toy trains that reads, "Buy a train for your boy for yourself," might almost have been written, "Buy a train for yourself so that your boy can play with it too." Many busy adults have spent innumerable delightful hours of pleasure and relaxation playing with their toy railroads. The late William Gillette, famous actor, had a miniature railroad running through his estate. After retiring from the stage, Mr. Gillette radiantly hastened to his gardens every day to plan new itineraries. The Rev. Edmund A. Walsh, S. J., dean of Georgetown University, is another toy railroad enthusiast. Hugh G. Boutell, engineer in the National Bureau of Standards, built a homemade miniature railroad system in the attic of his Washington, D. C., home. His toy community includes small depots, roundhouses and shops. The trains travel through papier maché mountains, passing over bridges which span imaginary rivers. He also operates crossing gates for safety at grade intersections.

Mr. Boutell likewise has constructed a reflecting telescope. The telescope making hobby is an interest shared with many other grown persons. The amateur astronomy clubs at the Museum of Natural History in New York City, whose membership comprises many hundreds engaged in all occupations, has an ardent group of telescope makers within its ranks.

The common desire to make things by hand has drawn scores of persons together and has been the nucleus for the formation of many clubs. In Washington, D. C., more than forty men engaged professionally in such fields as government work, law, bookbinding and photography formed the Capital Homecraft Club. Each member indulges in his pet handicraft at home, generally utilizing basements and attics for the making of items such as furniture, knickknacks, miniatures and models. Once a month the

craftsmen meet, trade tools and discuss ideas with one another. The professional bookbinder George A. Simonds declared that it required considerable time to find a satisfying hobby. After trying golf and the raising of rabbits and guinea-pigs, in addition to other hobbies, he finally discovered that wood carving was the medium best suited to his inclinations. Simonds added that the hobbies of the members of the Capital Homecraft Club "keep us from getting gray hairs before our time."

THE more expensive hobbies, such as rare book, art and coin collecting, are generally indulged in by men of means. J. Pierpont Morgan is an ardent collector of precious manuscripts and ancient tomes of ecclesiastical law and church history. Pope Pius XI likewise cherishes a collection of early documents of Christianity. Dr. William Osler, the famed physician and biographer of William Harvey, seeking solace after his son's death, began to study and collect early medical books and editions of Thomas Browne. After his own death this collection, left to McGill University in Canada, became the basis of the present Osler library there. Andrew Mellon has expended vast sums to purchase valuable art treasures. The financier also has gathered an extraordinary set of rare old maps. Mr. Mellon's remarkable folio of illustrated Chinese maps was exhibited recently at the library of Congress. The rattle of old coins is music in the ears of King Victor Emmanuel of Italy, who has built up one of the most treasured coin collections in all Europe.

Visitors to Greenfield Village, near Detroit, the community which houses Henry Ford's astonishing collection of Americana, are afforded a glimpse of the growth of the automobile magnet's unique hobby. Mr. Ford has spent millions to satisfy a personal expression. Fortunately a whole nation has the pleasure of enjoying his hobby with him.

Music, art and literature have always proved pleasant retreats for talented persons who have earned their livings in other fields. Henry Holt, the book publisher, satisfies his creative ambitions by joining musical friends occasionally on spare evenings. Mr. Holt is a cellist whose life is enriched by practicing trios with other artists. It has been said that former Vice-President Charles G. Dawes sometimes seated himself in a country club orchestra and played the "wicked flute" until 2 o'clock in the morning. Other public figures who expressed themselves in the musical field are the late Albert Woodin, former Secretary of the Treasury, who composed music, and William McNair, former mayor of Pittsburgh, who is adept at playing the violin.

Here we must not fail to mention the name of the great Albert Einstein whose hobby of fiddling is world renowned, nor the outstanding artist, Ignaz Paderewski, who combined two careers: politics and music. Of course, Paderewski's music was not merely a hobby; it was far more than that. Yet we can be certain that music must have been Paderewski's chief source of recreational pleasure when he assumed the presidential burden in his native country, Poland. This recalls the anecdote of the great artist Paul Rubens, recounted by Irving Stone in "Lust for Life." Rubens, when holding the post as ambassador to Spain from Holland, was accustomed to spend his afternoons before an easel in the royal gardens. A member of the Spanish court passed and remarked, "I see that the diplomat amuses himself sometimes with painting!" Rubens' reply came speedily. "No, the painter amuses himself sometimes with diplomacy." Prof. Albert Johannsen, University of Chicago geologist, on retirement recently declared that his time henceforth would be devoted to bibliography. A collector of dime novels, Professor Johannsen has a library of 4,500 paper backed Frank Merriwells, Nick Carters and Deadwood Dicks.

The persons who have turned to literature as a respite from other occupations have been many. Ruth Bryan Owen, the former Minister to Denmark, one of whose hobbies is collecting opals, recently recounted in a book her trailer-travel experiences in Europe. To mention the names of Disraeli, who turned from politics to novels; of William Gladstone, who found pleasure in his studies of Greek; of Pope Leo XIII, who throughout a long lifetime fingered the leaves of Latin poetry volumes, is to recall a mere few persons of repute who have gained rich experience during their lives.

EVERY one must have some sort of hobby—a sane mania which will take him to "worlds elsewhere," opening to him the "magic casements" of the imagination and the doors to the world of playful "busyness." Leonardo Da Vinci, the titan-minded Renaissance artist, played with dreams of flying a man-made machine. That was several centuries ago. Leonardo built unsuccessful models and, accordingly, was the laughing-stock of his countrymen. However, his dream engaged him in many hours of creative play. On a continent first discovered in Leonardo's day, the two Wright brothers played with the same dream and made it a reality hundreds of years later.

Every person needs to indulge in a recreational outlet for pent-up inhibited feelings which continually spring up within the subconscious mind and which find no course for development in his chosen occupation. Inhibitions are unhealthy. Pent-up expression leads to the feeling of inferiority and repression. The mind must be active but restfully and creatively active. A hobby is the rest cure for both overtired and understimulated nerves.

DON'T LET YOUR CHILD GET FAT!

By MILDRED HATTON BRYAN

DON'T LET your child get fat! If you do, it means that both you and your child will go through a period of mental suffering and unhappiness during the all important early teens. Don't let people frighten you with talk about growing children needing food. Give them all the food they need, but give them the right food. Give them food for energy, give them food for muscle building, give them food for calcium and phosphorus, give them food to supply the vitamins, but watch the starches and the fats.

Make them figure conscious. Tell them that we cannot all have beauty of feature but that we can do a great deal toward controlling our figures. Do not wait to have them reach this knowledge through bitter experience. The slights and hurts accorded the fat child are among the cruelest hurts in life. If your girl or boy begins to thicken around the waist at about the age of 9, do not fool yourself by saying, "Oh, yes, I was like that—had to have special sizes when I was that age, but just wait a few years! She will thin down just as I did." Because that will probably not be the case. At 13 you may be buying your girl size 18 dresses, or you may be having your son's suits made to order. And at 13 the iron will have entered the souls of those children, and they will have known mental suffering that may leave a serious inferiority complex.

It cannot be otherwise in this modern world that gives no quarter to the fat person. Children absorb this hostile attitude toward fat from the newspapers, the movies, the radio, the comic strips and our daily conversation. Unless the trouble is glandular the doctors tell us we need not be overweight. If it is glandular, then child or adult, we need the services of a physician. If it is not a glandular disturbance that is causing excess weight, then the control of body weight is a matter of will power and knowledge. Obviously, in the case of children, it must be will power and knowledge on the part of the mother, with the emphasis on knowledge.

This article is designed to start you mothers on the acquisition of that knowledge, and to urge you to start fighting fat when you first see it coming on. If you do not, you may be almost sure that your children will begin to fight it later with the wrong methods. They will begin to go without breakfast, which they should never do. They will begin to omit entirely foods which they should have in small quantities. And they will be cross and tired because of these wrong methods of eating. Unfortunately you will not be able to do a thing about it, because you let them get fat when they were younger and saw through a glass darkly, while now they are in high school and know everything.

It is for you to prevent this condition; or if it has developed, it is for you to cure it. You must give your child meals that are carefully planned to combine maximum nourishment with minimum production of fat. You must feed him *enough* to make him lose. Notice I said *enough,* and the emphasis is on that word. Do not think you can put your growing child on any of the freak reducing diets that are always floating about. No grapefruit and Melba toast, no lamb chop and pineapple, no banana and skim milk regimen will see this through.

The fat child must have food in quantity and must always leave the table with a feeling of

satisfied hunger. It requires careful study to accomplish this while effecting reduction. You cannot expect to get results in a hurry. One or two pounds a week is absolutely all that you can safely remove, and you may wait two or three weeks before you get the first pound off. The fat body stubbornly resists loss. You may then have success for a few weeks, and there may follow another period of stubborn bodily resistance. But eventually the flesh will yield, and your reward will be evident in slender hips, flat diaphragm and graceful limbs.

Briefly, then, these are the things you must do. First, bathroom scales are essential; they can be bought for as little as $3. There should be a daily weighing in, at the same time of day, in the same garment. Be sure that it is always done at the same time, as there is a range of about 2 pounds during the day. If you find that the daily weighing causes discouragement, make it every other day, but not less often.

Train yourself and your children to count calories, to know when a ration is properly balanced, and why. If you do not know these things yourself, then it is high time you do. Get from your public library the books your doctor recommends on foods and food values. Ask the home economics department of your high school for reference books of recent date. My own recommendation is the latest edition of "Feeding the Family" by Mary Swartz Rose. It merits conscientious study. Study especially the chapters on "Food for Children from Eight to Twelve" and "Food in Adolescence and Youth." Next, master the appendix, and use it as a constant source of reference until thinking in terms of caloric value and vitamin value becomes second nature to you.

Teach your children that after all a calory is just a term evolved to indicate the number of energy units in any article of food. Make a game of calory counting. Visualize the idea by drawing pictures of different 100 calory portions with "equal signs" placed between them. When the children see that sign of equality between a slice of bread and a small portion of butter they will begin to understand food values.

Fill yourself with information, and then pass it on to your family in small doses. Do not make too much of an issue of the subject of fat, if the child is too young to care. Usually, in the years when the fat is coming on, children are in the hoydenish stage, and it makes no difference to them. It is only after the flesh has arrived, along with the supersensitiveness

of adolescence, that it is wise to stress the fact that a reducing program is in effect. With younger children it is more successful to make a game of the whole thing. Every case presents its own problems and needs to be dealt with individually, but in every case there are certain fundamental things which you must do.

Plan your breakfasts to be nourishing and energy giving, high in proteins and calcium, low in starches and fat. After the long fast of the night, food is essential, and no less authority than the Diet Kitchen of the Mayo Clinic considers the following breakfast menu correct for a reducing diet: One glassful (average size) of fruit juice or tomato juice, one glassful of skim milk, one egg, one slice of bacon and one thin slice of toast, lightly buttered. If the child does not want this much for breakfast, reduce the amount by serving a half slice of toast and a half slice of bacon, but maintain the variety. The milk is needed for calcium, and the egg for protein, the first for bones and teeth, the latter for muscle building. Notice that cereals are omitted during reduction.

If your family program can be adjusted to it, arrange to have your dinners at noon, and have them filling. Begin them with a cup of thin soup, hot and stimulating, followed with an average portion of lean meat, two cooked vegetables and a green salad. For desserts serve one or two simple cookies or fruit or gelatin without whipped cream. Every day during the reducing program the child should drink a quart of skim milk.

Never serve bread and potatoes to the overweight child at the same meal, but do not completely omit either one from the diet. The average should be about one and one half slices of bread a day and one medium sized potato every other day. If your child prefers bread to potatoes, or vice versa, consider the preference, and apportion your calories of starchy food accordingly. Do not always omit cake, pie or puddings if the child hungers for them, but do not ever serve them after a meal high in calories. Vary your usual routine occasionally, and follow a soup and salad dinner with a generous portion of pie or cake. If candy is craved, have a candy dessert now and then, after a meal of low caloric count. Use as much ingenuity in this business of counting and apportioning calories as you do in counting and playing your hand in bridge.

If your child's school hours and your family arrangements will permit it, make the evening meal the lightest of the day, because during sleep the body is doing its slowest burning of fuel. And burn fuel it must, in order to repair waste. If food is not there to be burned, body fat will be consumed as fuel, which is just what you want to happen.

The matter of eating between meals is bound to come up. It is far better to supply a little food to stay the pangs of hunger than to allow the appetite for the next meal to become too keen. Even at bedtime it is wise to give the hungry child a little food, low in caloric value. For these between meal bites, supply fruit, skim milk or a cup of clear soup with a wafer. For high school children there will be the temptation of the gang and the corner drug store. Instead of forbidding your child to go there, try promoting the value of orangeade or any of the other drinks without ice cream. Stress the popularity gained by grace and beauty, while you soft pedal the thought of self denial.

Finally, remember these things. Your growing child must have more energy than you need. Your child must have enough fuel to create enough energy to repair waste, plus energy to grow on. Therefore you must never overdo the reducing program. Approach the problem deliberately, cautiously and understandingly. Be prepared for a long haul. Better take two years to the task than one. Do not hold to the reducing regimen too long. Reduce for a few weeks, and then raise the calory count to a maintenance count for a period, after which you again resume the reducing program. Keep in constant touch with your family physician while the plan is in effect, and follow his advice.

Habit is a powerful factor in eating, and the child who is rescued from the humiliation of fat by a wise mother who establishes the right eating habits for that child's particular needs is not likely ever again to develop wrong eating habits. If, however, the very child who presented the problem of the fat child at the age of 12 shows a tendency to become the very thin youth or young girl a few years later, the same knowledge of food values learned for reducing can be employed for building up the body. The boy or girl who has been taught that food is for us to control as one would control the flow of fuel to a heating system has been given knowledge invaluable to his future health and well being.

[NOTE.—In the October HYGEIA, Mildred Hatton Bryan will consider the other side of the weight problem in an article entitled "Don't Let Your Child Get Thin!"]

JOAN

Joan, in a dream, has said, "I think"—
Lifted her cup and forgotten to drink.

Joan, in a dream, is sliding up
The silver side of her cocoa cup.
What does she see from over the dim
Curve of her lips and a silver rim?
Where does she go? . . . If I do not stir,
I, who am old, may follow her.

"I think," she says, and her parted lips
Open a door, and her breathing dips
Over a hill and into a glade
Against the moss where flower and blade
Are clipped apart by sun and shade.

"I think," she says, and her lowered hand
Has opened wide the hidden door
Into the lost and silver land—

"I like this cocoa. I want more."

—MARION STROBEL

BAD HABITS IN GOOD BABIES PART II

By HERMAN M. JAHR

BOBBY STEPHENS JR. is 16 months old. He is a fine, healthy boy with all the qualities of amiability, wisdom and fun that are characteristic of his age and sex. To Mrs. Stephens and also to Attorney Stephens he is a problem of serious import. "He still throws up his food," the young mother complains. "It seems that instead of improving he is getting worse. Is there really nothing that can be done about it? You know I have followed instructions religiously; yet look at the child—he is skin and bone."

A glance at Bobby revealed a cunning smile as broad as his face. It was evident that the child was having a great time. "He knows we are talking about him," his mother explained. "You cannot deny," she added, "that he has gone through a lot."

The story of Bobby is interesting because it is typical of so many babies. Troubles of this sort are not inherent in the child but in those concerned with his care. His nature is not understood, and his needs are misinterpreted. The result is that the infant in his innocence and inexperience is often handed a figurative club to use as he sees fit over those near and dear to him. He soon finds himself the ruler of a small but loyal kingdom, making demands on his subjects without regard to their disposition, comfort or state of mind. He was born with a desire for power, a natural endowment; and this desire, though prematurely realized, must be utilized. It is utilized, indeed, and very capably.

When Bobby was a month old the mother complained that he was constipated. His bowels moved "only once daily," and at times he would miss even his daily evacuation but for the help furnished by the mother. As a rule the baby was given a suppository, and if this did not produce results, a laxative of some sort. Her physician has advised that there was little harm in letting an infant miss one or even two days, that since the baby takes only liquids there may not be enough stool to afford the stimulus necessary to produce an evacuation. The mother, however, had read books and pamphlets on infant care, and she insisted that her boy's bowels must move twice, or at least once, every day; if they did not do so voluntarily, she would use force. She herself is habitually constipated, knows its handicaps, and she would spare no effort, wise or unwise, in training her child to move his bowels daily. Thus the little fellow was subjected to suppositories, laxatives and enemas. Every time the child became in the least way fussy, Mrs. Stephens would run to the medicine cabinet, hurry back with a suppository or the syringe, and proceed with the attack on the bowels. Constipation was nothing less than an obsession with her.

If she gave the infant an enema in the morning, in order to be sure of a "movement" the following day she would give a "laxative" in the evening. This would produce a few loose stools, and as one would expect there would be no movement the day after. And so the struggle went on for five months, enemas and suppositories alternating with laxatives, one preceding or succeeding the other.

At this time Mrs. Stephens was prevailed on to offer the boy a chance for intestinal independence. The agreement was based on physiologic principles which, the young mother readily admitted, sounded plausible. Most babies go through a period of what is erroneously taken for constipation. The stool represents the residue of undigested food and a certain portion of intestinal secretion. By a series of muscle contractions in the walls of the intestines this mass of unused material is moved slowly down to the rectum. In this area the bulk ultimately sets up a stimulus to the muscles guarding the opening of the rectum, the anal sphincter, and by the aid of contraction of the abdominal muscles the stool is finally propelled outward. It becomes clear therefore that bowel evacuation is a complex physiologic mechanism involving the presence of residue, the contraction of muscles, and the production and transmission of nerve stimuli.

of childhood are often impressed with the tendency of one undesirable habit to follow another. This phenomenon is not strange because it is almost a universal rule that bad habits run not singly but in groups. The habit that is most annoying usually overshadows the others. When one undesirable trait is corrected the next one usually becomes the outstanding problem, then the next and so on.

Under the proper care, little Bobby Jr. at 9 months of age was an ideal baby. His mother, however, complains, "He eats like a bird; I don't know what he lives on. For the past few days he has been refusing his cereals; vegetables he does not even touch. I do manage to force a quart of milk down on him through the day though." There follows a dramatic narrative of food refusals, depicting individual incidents with minute details. "Is it teething?" she asks hopefully. "Or do you think there is something wrong with his stomach? You remember he was *so* constipated," she adds.

Bobby's record shows steady progress in development and up to this time no complaints about his eating habits, with the exception of one remark when he was 7 months old that he did not relish string beans and refused mashed carrots. At that time, Mrs. Stephens was advised to omit those two vegetables for several days, then to try again in small quantities and not to take it seriously if they were refused. There are other things that the baby can take, and no individual food is important enough to create an issue. Mother Stephens was agreeable enough and probably would have had no trouble at all from this source had not a well intentioned friend convinced her that carrots are an essential item in the dietary and that their omission produces anemia.

In the healthy baby, refusal to eat can almost invariably be accounted for on the basis of a dislike, at times for good reason, of one particular food. Mothers fail to realize that in forcing a child to take this objectionable item they show stubbornness far less justified than that of which they accuse the infant. The baby in his turn is shown an excellent example of inconsiderateness on the part of his attendant, and at the same time he seizes the opportunity of making himself important by not eating. He soon learns to associate eating with fighting, and it affords him no small degree of success in matching his wits against those whom he

The young infant's diet consists of milk, an almost completely digestible food with little residue. The intestinal secretions are small in amount and the intestinal muscles are thin and comparatively feeble in their contractions. The nerve endings are not fully mature and are therefore slow in transmitting impulses. Thus it is illogical to assume that when an infant does not have a bowel movement every day he is constipated. Constipation in older babies does exist and is usually the result of indiscriminate use of laxatives, suppositories or enemas in early infancy when there is little justification and practically no need for such forcing.

Bobby, we strongly suspect, at the age of 6 months enjoyed the tumult produced by his constipation, and so he cultivated it to the point where he would rather suffer than give it up. He used it not only as a weapon on his mother but as a source of pleasure as well, because the repeated insertion of the enema nozzle was undoubtedly associated with enjoyable feelings in this sensitive zone. It took a complete change of attitude from obsession to indifference on the part of Mother Stephens to correct this pernicious habit of "holding back" the stool in order to command sympathy and attention. By means of a sound feeding regimen, discontinuation of cathartics and other uncalled-for procedures, the problem was solved.

The solution was neither brief nor simple, to be sure, but as long as the struggle was successful all concerned were happy over the final outcome. At the age of 8 months, Robert Stephens Jr. celebrated his intestinal victory. He had his "natural movement." He neither strained nor cried; in fact, the mother related she had no knowledge of the exact time in which this great event took place. There were some misgivings about soiled diapers, but with a little encouragement Mrs. Stephens remained satisfied. This satisfaction, alas, was of short duration. Those who deal with the vagaries

can so easily defeat emotionally. The more his adversaries worry, the less he eats. But eating is a basic function of life, and if mothers were less concerned with the overpopularized dietary fashions for their infants the impulse to eat would suffer as little abuse as does, for instance, the impulse to breathe. This is in no way meant to detract from the importance of a wholesome schedule of feeding the required elements for the growing organism. Rather it is intended to emphasize the necessity of a proper attitude that calls for broadmindedness and tolerance where the baby's sensibilities are concerned. Children, too, have their off days regardless of whether or not they are entitled to them. The fact is that few children extend their "fast" to the point of appreciable loss in weight. A child who loses weight through not eating demands careful investigation as to his physical well being. It is not merely a bad eating habit. Persistent refusal of food accompanied by a loss in weight indicates a departure from health.

To return to Bobby Stephens Jr.—Bobby had refused carrots. His mother decided that the baby would simply have to take it and like it. Whether he liked it will never be known, but take it he did. Victoriously and with a sense of self confidence, Mrs. Stephens decided that her boy could be made to eat all foods that were "good" for him. She was not inclined to rear a nervous child, a child finicky about his food. She began to consider herself quite a psychologist and even became argumentative on the subject of child training. That Bobby, he was going to be a real boy! No constipation, no refusal of food!

For about two months, Bobby was a model boy, indeed. To the delight of his parents and others interested in his development he began to take steps alone, to utter words in his own immature style and to perform many other odd feats which make a healthy baby the pride and joy of the home. Happiness reigned in every nook of the Stephens household.

Came a day when Bobby refused his milk. Just why he refused it was a puzzle to his mother, because milk is the one food about which there never had been any trouble. There had been some dispute about certain vegetables, but milk was always relished. Mrs. Stephens then and there decided to use the same tactics with this food as she had done with the carrots: He would have to take it and like it. Under compulsion he took it; like it, he did not, however. One hour after he was fed he vomited. This his mother erroneously attributed to teething. The following morning the episode was repeated. That afternoon the story was told dramatically. The child appeared well, and the suggestion was made that it would be wiser to omit the milk for a day or two than to fight over it. It was doubtful that the erupting teeth had any bearing on the situation.

The following day, Bobby took the milk willingly and retained it. Several days later he spit up the carrots. This Mrs. Stephens considered a direct insult to her reputation as a psychologist, and contrary to all accepted rules of this calling she became angry and scolded the child. In the evening the mother relegated the feeding to the maid. Bobby ate a hearty meal and enjoyed it. In the morning his mother fed him cereal. He took it and kept it down for about one hour. The maid fed him at noon, and he vomited "all the food that he had eaten for the past week." Vomiting kept up for three days.

The child was placed in the hospital where his condition was studied. X-ray examinations and other tests of his gastro-intestinal canal failed to reveal any physical basis for his vomiting. For two days, Bobby was fed through a nasal tube. On the fourth day he was given small quantities of food. He kept it down. Vomiting had ceased, and he was dismissed from the hospital several days later with a plea to his mother not to discuss the vomiting or any of its phases.

It does not take much for a child to vomit. Practically every infant goes through a stage when spitting up or regurgitation occurs with great frequency. The recumbent position of the child, the nearness of the stomach to the mouth and the shape of the stomach itself offer a condition which makes vomiting easy. At times, particularly when the stomach is overfull, the excess simply runs out. By the time the baby is several months old he has had ample experience in giving back food. It is therefore not uncommon to find youngsters who utilize vomiting as a weapon wherewith to muster all the attention available. Furthermore, the nervous system of the young *(Continued on page 830)*

Dressing Up The

By JULIA M. SAMPLE

NONE BUT the diabetic can realize how tiresome it becomes day in and day out to look at and eat the same sized piece of meat, the same sized heap of vegetables, the same sized potato, followed by the inevitable same number of slices of orange! But there is no necessity for this monotony, if one is willing to spend a little time and thought. The diabetic can have delicious meals; in fact, theirs may be better tasting food than most of their more fortunate neighbors enjoy.

Your first requisite for such meals is a set of very small cooking utensils. The improved flavor of food cooked in this manner is surprising. Then every bit of the precious butter and cream goes to you and not to the utensil! Fifty cents spent in a "5 & 10" will supply your needs. By all means buy a toy egg beater for whipping cream, a spider which holds one chop, a casserole which holds two cupfuls of food and a double boiler which holds the same amount. You may buy many more fascinating articles, but these are necessities.

After living on such a simple diet, a diabetic patient's taste becomes keen and discriminating, and any bit of new seasoning or new combination will change the entire character of the meal. It is easy to have a variety of seasonings on hand. For instance, grow parsley, thyme, chives and mint in little pots. Dried celery leaves will keep well in a glass jar. Have also bay, dill and garlic for their zestful flavor. All these have no food value but will taste well.

If you will learn to do without butter on bread or crackers and use it with vegetables instead, the great difference in flavor and texture will well repay you. By experimenting you will find that a little butter goes a long way when used in a small pan. Try this some day: Instead of 75 Gm. (grams) of carrots, cook 60 Gm. For the remaining 15 Gm. use chopped onion lightly browned in butter. Add the diced carrots to this, and you will say carrots never tasted so good.

One of the simplest means of adding novelty to meals is to combine vegetables. Allowing 150 Gm. of 5 per cent vegetables and 75 Gm. of 10 per cent vegetables to a meal the following suggested combinations are equivalent. Adjustment can be made to your diet by adding or subtracting your gram allowance. One gram is approximately $\frac{1}{32}$ ounce. When butter is mentioned, take it from your allowance for that meal.

Canned peas..... 75 Gm.
Grated carrots..... 50 Gm.
Minced onion..... 25 Gm.

Cook the carrots and onion for ten minutes with a little salt in just enough water to cover. Add peas, well drained, with a bit of butter. Shake over heat until hot. There should be no liquid left when onions and carrots are cooked.

Canned peas..... 125 Gm.
Diced celery..... 50 Gm.

Cook celery in as little water as possible, with a pinch of salt. Add drained peas with a bit of butter. A small piece of dill added while celery is cooking makes a pleasant change.

Canned peas..... 100 Gm.
Chopped mushrooms.... 100 Gm.

Brown the mushrooms quickly in butter. Add salt and well drained peas. Keep stirring lightly until mixture is thoroughly heated.

Green peppers..... 150 Gm.
Corn ..... 50 Gm.

Remove seeds from peppers, and cut crosswise in thin slices. Boil for 5 minutes in salted water. Drain, and add corn and butter.

Green peppers..... 150 Gm.
Tomatoes ..... 150 Gm.

Cut peppers in small pieces, and cook with tomatoes only long enough to have the peppers tender. Here is a chance for you to experiment with various seasonings. Several things go well with this.

Tomato juice ..... 150 Gm.
Carrots ..... 75 Gm.

Slice carrots very thin, and parboil. Sauté in butter. Add the tomato juice, salt and a sprig of each herb you have. Cook until carrots are tender.

Diabetic Diet

Canned peas..... 75 Gm.
Mashed turnips..... 75 Gm.

Yellow turnips enhance the appeal of this combination. Add salt and butter. A leaf of mint, minced, is excellent with this.

Carrots ..... 75 Gm.
Turnips ..... 75 Gm.

Cut carrots and turnips in strips as wide as a shoestring. Place in boiling salted water, and cook until tender, which will be in 10 or 15 minutes. Drain well. Add butter and a minced sprig of chives.

Diced carrots..... 75 Gm.
Spinach ..... 150 Gm.

Cook separately. The less water you put with spinach, the better. Drain the spinach, and chop fine. Add carrots, butter and a little nutmeg.

String beans..... 75 Gm.
Celery ..... 150 Gm.

If the string beans are young, use 150 Gm. in this recipe and the two following. Dice the celery. Cook the vegetables, together, if the string beans are fresh; otherwise cook the celery, drain, and add butter and beans. Heat thoroughly.

String beans..... 75 Gm.
Tomato juice..... 150 Gm.

Split fresh string beans, and cook in tomato juice with a little salt and several celery leaves, dry or fresh. Remove leaves before serving, and then add butter.

String beans..... 75 Gm.
Okra ..... 50 Gm.
Onion ..... 50 Gm.

Cut the okra in thin slices, and mince the onion. Sauté in a bit of butter for 5 minutes. Add cooked beans to this mixture.

Green peppers..... 150 Gm.
Celery ..... 150 Gm.

Cut the celery in 2 inch lengths and the peppers in small squares. Cook together with a small piece of bay leaf. Remove leaf, drain, and add butter.

Tomatoes ..... 150 Gm.
Squash ..... 75 Gm.

Cut squash in very small cubes, and cook in the tomatoes until soft. Add seasonings while cooking and butter just before serving.

Tomatoes ..... 150 Gm.
Okra ..... 150 Gm.

Cut okra crosswise. Add to tomatoes, and cook until tender. Add seasonings while cooking and butter just before serving.

Cabbage ..... 150 Gm.
Onion ..... 75 Gm.

Chop cabbage into small pieces, and place in rapidly boiling salted water. Boil for 10 minutes in uncovered kettle. Drain, and add butter, minced onion and a pinch of ground cloves. Allow to simmer for 5 minutes, stirring occasionally. If you will follow this method of cooking cabbage, it will always remain white.

Another welcome change is made with one-dish meals, especially if you like filling food. These meals are made by combining the allowed amounts of various meats and vegetables. You will notice that vegetables have been substituted for the orange, so there is no dessert.

Using the following diet as a basis, it is easy to adjust the meals to your own diet by adding or subtracting your gram allowance.

Diet Prescribed (for one meal)

Meat	75 Gm.	Potato ...	90 Gm.
5% vege-		Bread ...	30 Gm.
tables .	150 Gm.	Orange ..	150 Gm.
10% vege-		Cream ...	60 Gm.
tables .	75 Gm.	Butter ...	10 Gm.

Eggplant Scallop

Ground ham..... 75 Gm.
Celery ..... 50 Gm.
Green peppers..... 50 Gm.
Onion ..... 25 Gm.
Tomatoes ..... 150 Gm.
Mushrooms ..... 100 Gm.
Bread ..... 45 Gm.
Eggplant ..... 300 Gm.
Bacon fat..... 5 Gm.
Butter ..... 12 Gm.
Cream (for tea)..... 20 Gm.

Cut the eggplant into cubes, and soak in salted water 15 minutes. Cook the onion and pepper, minced, in the bacon fat. Add the tomatoes, and season with salt, pepper and a dash of cinnamon. When the mixture boils, add the eggplant, well drained, and the diced celery, and allow to simmer until almost tender. Slice the mushrooms and brown them in the butter. Add to the eggplant with half of the bread, which has been crumbed. Put half of this mixture into a casserole; cover with ground ham, and then add the rest of the mixture. Sprinkle the remaining crumbed bread over the top, and bake in hot oven until brown.

Spanish Macaroni

Cooked meat	75 Gm.
Tomatoes	100 Gm.
Green peppers (minced)	100 Gm.
Onions (sliced)	75 Gm.
Uncooked macaroni	45 Gm.
Butter	18 Gm.
Cream (for tea or coffee)	20 Gm.

Cook tomatoes and onions until onions are clear. Press through a colander. Cook the macaroni for 10 minutes in boiling salted water. Drain. Butter a small casserole, and place macaroni in it. Then cover with the meat, put through a fine meat grinder, the minced peppers and remaining butter. Pour tomato mixture over this, and bake in moderate oven for 30 minutes.

Veal and Noodles

Veal	75 Gm.
Celery	100 Gm.
Onion	75 Gm.
Carrots	25 Gm.
Uncooked noodles	75 Gm.
Butter	18 Gm.
Cream (for tea or coffee)	20 Gm.

Place vegetables in enough cold water to cover. When boiling, add veal, cut in inch pieces, and a pinch of salt. When meat is tender, set kettle aside until cool. Remove the meat. Press the remaining contents through a strainer; replace on fire, and reduce to ½ cup. Brown the veal in the butter. Place on top of cooked and well drained noodles. Pour strained vegetables over all. Serve immediately.

Cabbage with Apple

Canned corned beef	75 Gm.
Cabbage	250 Gm.
Tart apple	315 Gm.
Onion	25 Gm.
Butter	10 Gm.
Cream	60 Gm.

Shred the cabbage, discarding the heavy midrib. Put into a kettle of boiling salted water, and boil uncovered for 5 minutes. Place butter and minced onion in a saucepan, and stir for a few minutes. Add well drained cabbage and apples sliced thin, also salt and pepper to taste. Cover, and simmer very slowly for 20 minutes, tossing the cabbage three or four times. Add the corned beef in four pieces the last 10 minutes. Last of all add 40 Gm. of cream. Serve immediately.

Chop Suey

Meat (beef or pork, raw or cooked)	75 Gm.
Celery	100 Gm.
Tomatoes	75 Gm.
Green peppers	25 Gm.
Mushrooms	100 Gm.
Onions	75 Gm.
Uncooked rice	45 Gm.
Butter	18 Gm.
Broth	⅓ cupful
Cream (for tea or coffee)	20 Gm.

Cut meat in small pieces, and sauté in butter. Add onion sliced thin, and sauté 2 minutes. Cut celery in 2 inch lengths; mince the peppers, and add both to the sautéed meat; then add the broth. Cook quickly and not too long. During the last 10 minutes of cooking add the prepared mushrooms and quartered tomatoes. Serve on top of rice cooked until dry. If you have no broth, use ½ bouillon cube to ⅓ cupful boiling water, and omit salt.

Russian Vegetable Stew

Cooked meat	75 Gm.
Celery	40 Gm.
Cabbage	80 Gm.
Tomatoes	80 Gm.
Carrots	60 Gm.
Onion	15 Gm.
Cooked beets	150 Gm.
Potato	120 Gm.
Butter	10 Gm.
Sour cream	40 Gm.
Meat stock	1 quart
Cream (for tea)	20 Gm.

Use uncooked vegetables, except the beets. Mince the onion, and brown slightly in butter. Add the meat stock. Mince or grate all the other vegetables, and add to stock. Let simmer for 2 hours. Add 1 teaspoonful lemon juice, and just before serving add the sour cream. This stew should be the consistency of squash when finished. It is an excellent dish to serve with cold meat.

Corned Beef Hash

Cooked corned beef	75 Gm.
Potatoes	180 Gm.
Beets	125 Gm.
Carrots	50 Gm.
Turnips	50 Gm.
Onion	75 Gm.
Butter	18 Gm.
Cream (for tea)	20 Gm.

Put the butter in a hot skillet. With the exception of the onion, all the vegetables have been cooked. Slice the onion, and mix all the ingredients together with a fork. Put the hash into the skillet, and stir until it is heated through. Then pat down, and cook slowly until under side is brown. Fold over like an omelet, and serve with chopped parsley on top.

Hotch Potch

Cooked ham	25 Gm.
Cooked chicken	50 Gm.
Uncooked barley	45 Gm.
Cabbage	150 Gm.
Carrots	50 Gm.
Onion	75 Gm.
Turnip	100 Gm.
Bacon fat	15 Gm.
Cream (for tea or coffee)	20 Gm.

Put barley in ¾ quart boiling salted water. When boiling rapidly add the coarsely cut cabbage and the rest of the vegetables chopped fine, also bacon fat. Simmer until barley is soft and the whole is thick. Place in serving dish, and sprinkle top with ground ham and chicken.

Macaroni and Cauliflower

Hamburger	75 Gm.
Cauliflower	200 Gm.
Tomato juice	200 Gm.
Macaroni uncooked	45 Gm.
Onion	75 Gm.
Green pepper	50 Gm.
Butter	18 Gm.
Cream (for tea)	20 Gm.

Mince onion and pepper, and brown in half the butter. Add the hamburger and seasonings, stirring for a few minutes. Place cooked, well drained macaroni in a buttered casserole; cover with meat and then with cooked cauliflower. Pour the tomato juice over all, and bake for 15 minutes. Dot top with remaining butter. The top should be a golden brown, and the whole should be well saturated with the tomato juice.

Speeding Up Your Reading

By ELIOT D. HUTCHINSON

OF LATE years the amount of reading matter which one is called on to digest in order to keep abreast of the modern world has increased enormously. Into the home pour publications of all types—books, magazines and newspapers—in greater variety than ever before. Some authorities estimate an increase of nearly 200 per cent since 1900.

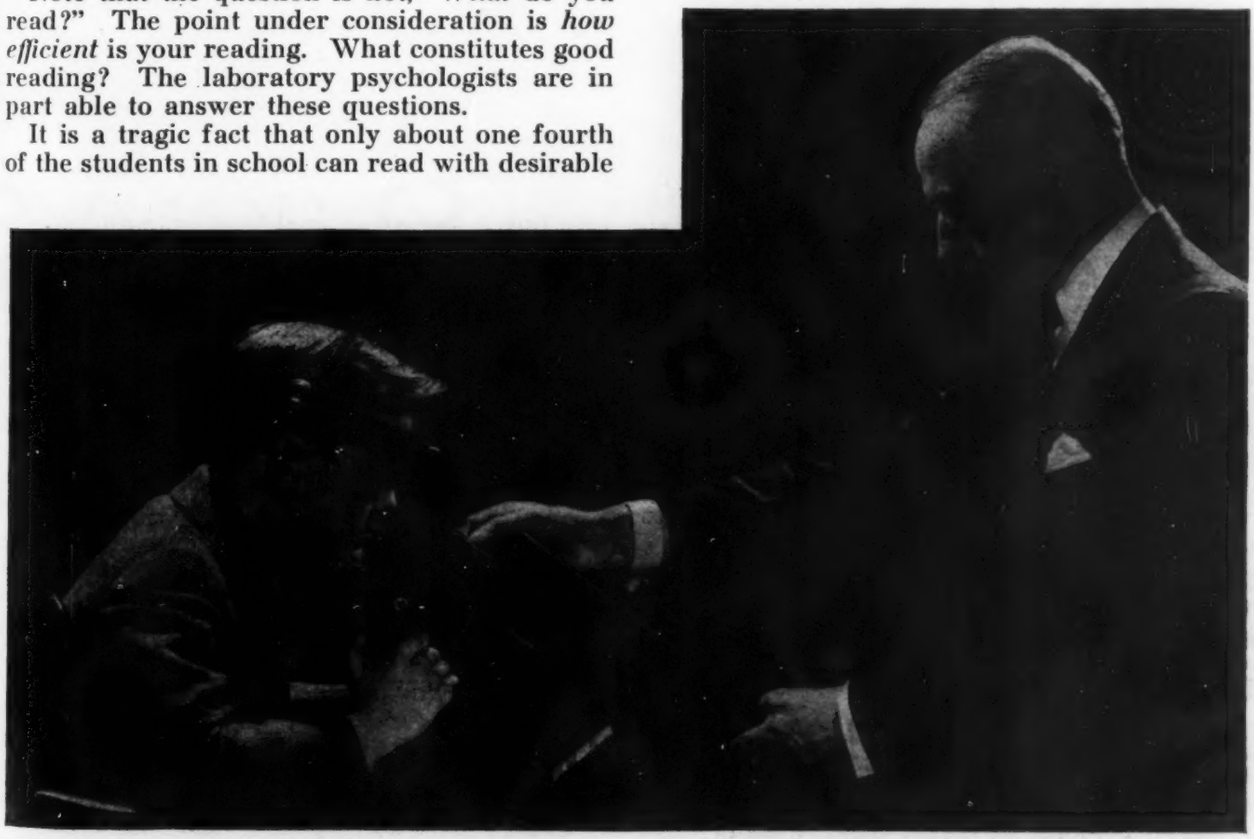
In school the average modern child is required to read fifteen times as much as the older generation read in the grades twenty-five years ago. In the colleges the necessary reading has jumped five times the former amount. The American school presents primarily a reading curriculum.

In business, men are swamped under piles of letters and brochures; in the professions they are weighed down by innumerable articles and books which demand technical consideration. Everywhere contact with the printed page is forcibly increasing, and the race is to the efficient. It is, therefore, important to ask, "*How* do you read?"

Note that the question is not, "*What* do you read?" The point under consideration is *how efficient* is your reading. What constitutes good reading? The laboratory psychologists are in part able to answer these questions.

It is a tragic fact that only about one fourth of the students in school can read with desirable efficiency. The other three-fourths fumble along rarely aware that one cause for their suffering and low grades lies in their inability to grasp the printed word. Often it is not the lack of intelligence but the lack of proper habits of eye movement which is responsible for academic failure. Taking the school population as a whole, Dr. Arthur I. Gates of Columbia University estimates that, of the pupils of the junior and senior high schools, at least 1 per cent are no better than third grade readers; from 4 to 5 per cent fall below the reading ability required for the fourth to the sixth grade, and 15 per cent rank below the average level required for eighth grade work. It seems probable that at least 25 per cent lack the ability called for by the typical eleventh and twelfth grade programs.

Moreover a recent survey of 12,000 pupils in grades four, five and six in a large city shows that 30 per cent of these pupils have not progressed farther than the fourth grade reading level. And what is more significant is that in all these grades a large number, perhaps as high



HOW WELL DO YOU READ? A CAMERA WHICH RECORDS EYE MOVEMENTS GIVES THE ANSWER.

as 90 per cent, of the general academic failures are discovered among those who have never acquired adequate reading habits. In a recent investigation which I myself made on college men who were on probation in their studies, I found that many were below average in reading ability. The moral is clear. In such fields, especially in the academic, the most skilful readers are as a rule among the most efficient workers.

The essence of the problem is simple. Good reading is rhythmic reading.

We read with our eyes. That is obvious. What is not so obvious is that each eyeball is moved in its socket by six muscles arranged in pairs, so coordinated in their nerve connections from the motor areas of the brain that the eyes move together in almost perfect teamwork. As one moves, so with the exception of a slight convergence moves the other. These coordinated movements are called conjugate movements.

In reading, the eyes travel together across a line of print, not smoothly and without interruption as might be supposed but by fixating successive points in a series. They halt briefly at each of these points before moving rapidly on to the next. These jerky motions are called saccadic movements.

In their progress across the line the eyes of an efficient reader rarely regress, or retrace their steps, until the end of the line is reached. Then, with a long reverse sweep, they move to the approximate beginning of the next line. I say *approximate* beginning, for rarely does the good reader start the line with fixation on the first letter but rather on an indented point.

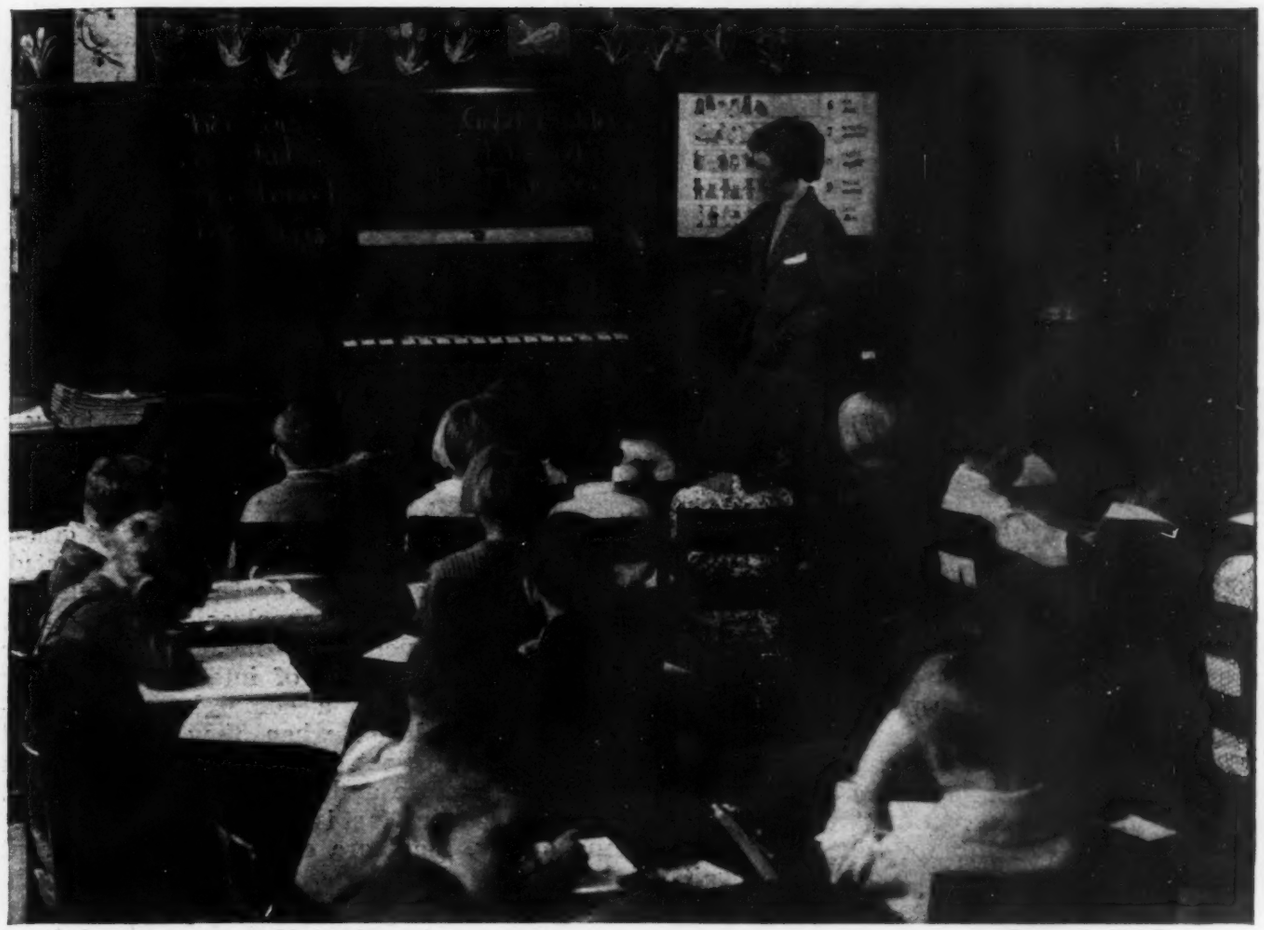
Each of these jumps occupies about one fortieth of a second, the pauses between jumps lasting much longer. Thus a large proportion of the time spent on each line, perhaps 95 per cent of it, is given to these fixations. Less than 10 per cent is occupied in actually making the movements. It is an interesting fact that during these rapid movements apparently nothing is "seen." The movements are in fact simply the means of progressing from one pause or fixation to the next where the elements of the text, a little to each side of the point of fixation, are perceived.

In reading efficiently, therefore, the eyes should move together as a pair in approximate parallel form from point to point, making roughly the same number of fixations for each line. Rarely do they show much regression, and they are so adjusted in speed that comprehension keeps pace with clear vision.

In the older school systems, teachers frequently attempted to increase the speed of reading and to introduce rhythm by indicating to the pupils the fixations and the rate at which material should be read. But usually they could make no check on the number of regressions, if indeed they knew of them at all; and hence, inefficient, nonrhythmic habits were often established.

The results of poor habits were seen not only in the simple inability to read at a specified rate but in behavior problems as well. Many students who show reading disability manifest tendencies toward one or more of the following forms of behavior: self consciousness; inferiority; eccentricity; nervous habits such as stuttering and restlessness; defence reactions, including loud talk and defiant conduct, mischief-making, thieving and destructiveness, and withdrawal reactions, such as truancy, daydreaming, indifference and apparent laziness. In short, failure in reading may produce the same symptoms of maladjustment as failure in any other field of activity. Reading disability often, in fact, amounts to a psychologic catastrophe, sometimes virtually equivalent to social failure. And for some reason the development of compensatory reactions, such as the ability to draw, sing, speak or act, is in this field rare. The student usually struggles along with his reading habits permanently fixed at a low level of efficiency.

Modern laboratory psychologists have of late developed instruments for accurately photo-



MODERN DEVICES TRAIN CHILDREN TO READ WISELY AND WELL; THAT IS, EFFICIENTLY AND QUICKLY.

graphing these fleeting eye movements on motion picture film. These photographs are of the utmost value in diagnosing difficulties in reading. But more than that, these investigations have also developed apparatus for correcting some of the disabilities thus discovered, first by remedying defective vision and poor muscular coordination and second by the inculcation of habits of rhythmic reading. The results of these combined methods are at times remarkable.

The mass of records that have been obtained by the use of these instruments confirms the fact that cases can be improved as much as from 50 to 100 per cent with a relatively small number of training periods. The New York City PWA project in remedial reading for 1933, which employed a group of from 400 to 750 remedial teachers, reports that more than 12,000 persons have received instruction in one form or another, and that 93 per cent of them were shown to be improved. The benefits spread in other directions as well. It is not only that the words read per minute are increased, but often thereby the whole social, educational and economic success of the individual is affected.

Many a business man, harrassed by the excessive ocular demands of his office work has long since given up virtually all cultural reading because by the end of the day his eyes are so tired that further work is a strain. Thus unwittingly he dulls his mind to world trends and an appreciation of vital human relations.

The need for work in the field of reading was recognized as early as 1900. The early investigators were forced to build elaborate and expensive cameras for the photography of eye movements. Recently more efficient eye movement cameras for clinical practice and office use have been developed, giving thoroughly objective records of the behavior of the reading eyes. Records can be taken quite easily with the patient looking through his normal glasses and reading at the customary angle. Thus they become exceedingly accurate pictures of the behavior of the patient's eyes under normal circumstances. The principle of this instrument is interesting.

The subject, whose head is held firmly in a head-and-chin rest, is asked to read a small 100 word card placed in the customary position of slight declination from the horizontal and well illuminated. While he remains in this position, small beams of light are thrown from each side on the front of the eyeballs in such a way as to create an intense spot of light

on the outer surfaces, or corneas. The light reflected from the shiny wet surfaces of the eyeballs is then carried down small telescopes, one for each eye, until it is brought to focus on a view finder or on a moving film. It is obvious from this arrangement that as the motion picture film travels upward through the camera past this focal point, while the eyes move horizontally across the lines of print, the general movements of the record will be diagonal. But since there are a number of places on the line of print where the eyes are stationary for short periods of time, the record will in reality look like a double stairway, or steps, dropping from left to right across the film. In practice the patient is asked to start reading at a given signal; the film is set in motion at the same moment, and the complete eye movements are thus recorded for that passage.

Reading actually takes place during the pauses, here recorded as short vertical lines, since the film is moving upward while the eyes are at rest. It is obvious that the more words a person can take in or perceive during each halt, the fewer will be the number of fixations to the line. The average number of words that can be read at each fixation is known as the span of attention, or span of recognition. Suppose your eyes stop six times in crossing a line containing ten words; your span of recognition or comprehension would then be about 1.6 words per fixation, an important measure of reading ability. You can roughly estimate this span by carefully counting the number of times you can feel your eyes jump in crossing this page, and then dividing by the number of words to the line. At first glance you might think that this span would be fairly large, say four or five words, for such a number of words can be seen at one short fixation where no movement is involved. But such is not in fact the case. Actually a good college reader takes in rarely more than 1.7 words per fixation.

The types of irregularity which appear on the analysis of the photographic records are in one sense complex and yet in another sense obvious from the nature of the situation. In the first place, there may be a lack of parallelism in the pathways on the film, showing that the eyes either converge or diverge as reading progresses, this being a common source of fatigue owing to the muscular tensions involved. In the second place the number of fixations per hundred words may be too great, allowing inadequate time for the comprehension of the material. Again the number of regressions per hundred words may be large, thus seriously interfering with the desired rhythm of the movements. Moreover, fixations may be of differing duration, some long, some short, thus also reducing the smoothness of the reading. I saw an interesting case recently of a woman who skipped lines, lost the place and had to retrace her steps—all extra movements which accounted for her constant aversion to reading. It often happens that in the return sweep the eyes overstep the desired point of fixation, thus necessitating a double adjustment at the beginning of each line. Or again the return sweeps may be curved instead of straight and may not land on the desired point without further torsion. All these difficulties of coordination, each a separate cause of failure, represent habits which can be remedied only as they are carefully diagnosed and as new and more rhythmic habits are laboriously acquired.

It is apparently difficult to trace back to their origin the large number of fundamental causes of disability in pupils who have been long in school. Often these causes go back to factors which made their appearance in the first grade, and some of them are not easily corrected. Primarily visual defects, deafness, nervousness, speech defects, poor schoolroom organization, ineffective instruction, low mental age and poor attention through lack of interest, are factors which suggest that a comprehensive examination of children when they enter school would save a great deal of waste in the form of school failure and personal maladjustment. The encouraging fact is that the higher the reading ability, the more easily can improvement be stimulated.

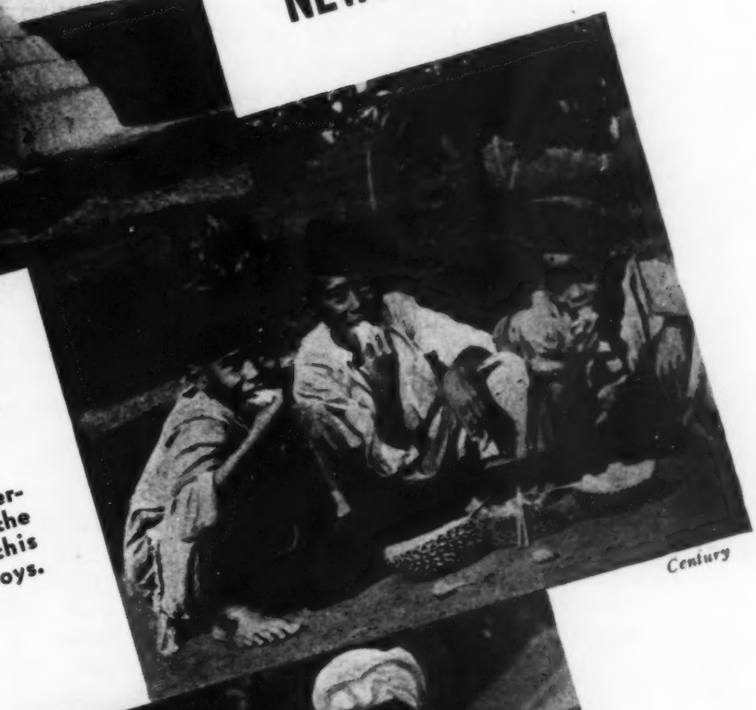
But to return to our photographs. If one knows the rate of movement of the film, usually one-half inch per second, the length of the record and the number of words in the test passage, it is not hard to calculate the speed of reading. A second grade school child should be able to read on the average 90 words a minute; a fifth grade child 182 words, and a seventh grader 230 words. By the time the child reachess high school he should be reading silently at the rate of from 260 to 300 words a minute, and by the time he finishes college the rate should have reached from 320 to 350 words. I have discovered some college students who read at the rate of 550 words a minute and others at the rate of only 200. It is interesting to note that the comprehension of the faster readers is as good as, if not better than that of the slower. This also means that the faster men need spend less than half as much time on a given assignment as the slower men do. Such great differences obviously point to serious educational problems. You can obtain a rough estimate of the speed of your reading by taking an ordinary page of textual material of medium difficulty, such as this, and having a friend mark time for you while you read. At the end of one minute, count the number of words you have read. You will be interested to see how your rate compares with the figures I have just given.

A little further computation, consisting of counting all the fixations *(Continued on page 853)*

NEWS and VIEWS

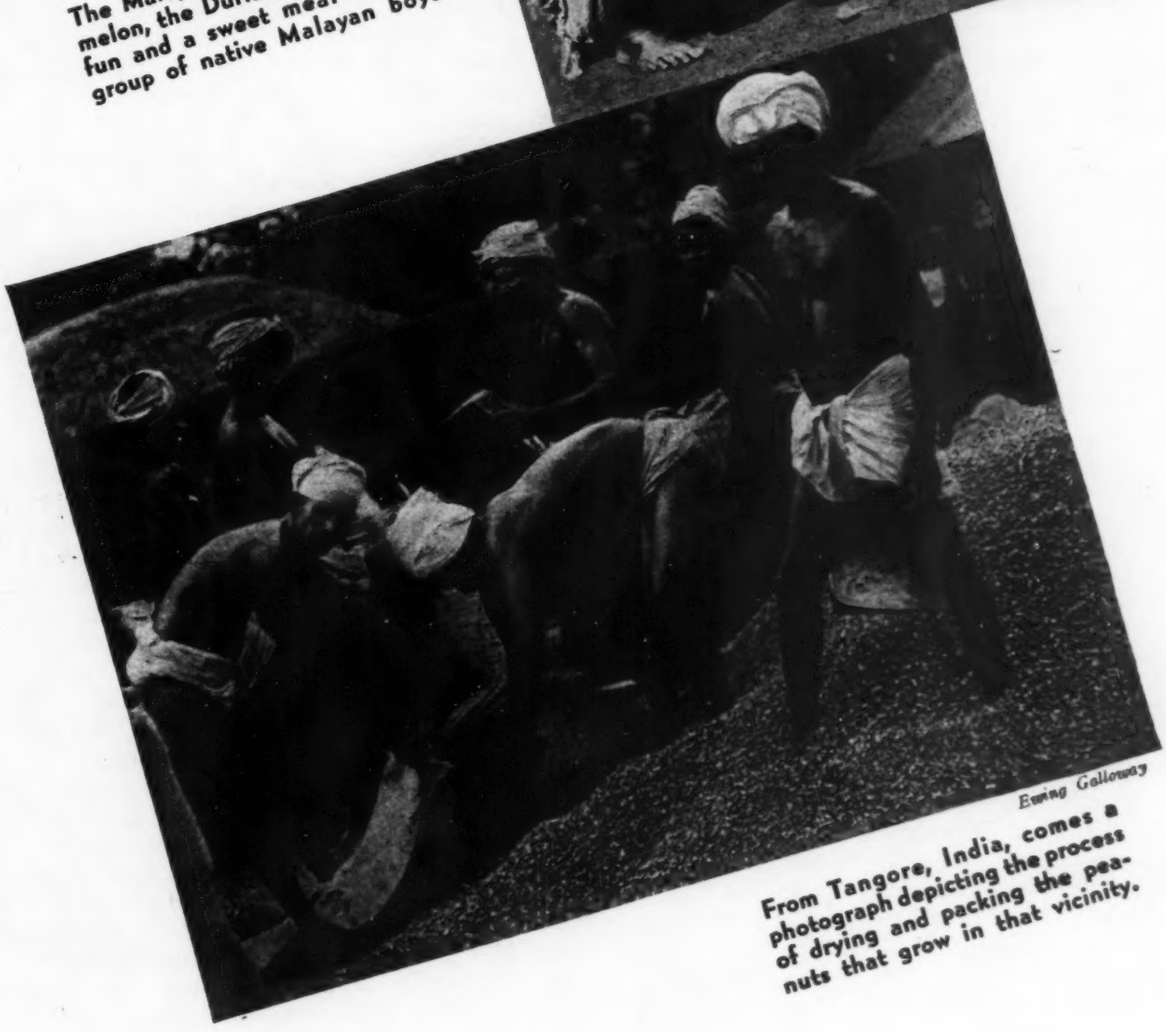
Ewing Galloway

High mud walls cast the shadow that cools the snow stored in this Persian mud ice house. A hole 30 feet deep sinks below it.



Century

The Malay equivalent of watermelon, the Durian, furnishes the fun and a sweet meal for this group of native Malayan boys.



Ewing Galloway

From Tangore, India, comes a photograph depicting the process of drying and packing the peanuts that grow in that vicinity.

GELATIN THE CHAMELEON OF FOODS

GELATIN as it comes to the modern dinner table may appear in almost any color of the rainbow. It may have flavors drawn from the ends of the earth and be in shapes as various as the ingenuity of manufacturers and housewives can make it. It is like a chameleon, in contrast to other common protein foods such as cheese or fish or meat. The chameleon, as every one knows, is a pretty little lizard which one may discover in tramping through the woods of some of the southwestern states. One can take it in hand and watch it change to the color of its surroundings.

Few of us who eat gelatin in desserts or salads realize the glorious past that this protein has had in developing the science of nutrition. Just as it changes color and flavor on our tables, it has played an ever changing but important rôle on the stage of scientific nutrition during the past two centuries.

A little more than 250 years ago, a young French inventor, Denis Papin, was hard at work in the laboratory of the great English chemist, Robert Boyle. He was trying to find better methods of preserving meat, so that sailors would not have to eat so much salt with their diets of pickled beef and pork during the long sea voyages.

For five years, Papin experimented with the gases that are given off when foods spoil. In the course of these experiments he devised the forerunner of the modern pressure cooker and conducted many experiments with it. After suitable cooking he found that meat could be kept many weeks without spoiling. This was nearly 200 years before the days of Pasteur.

The diary of Papin contains the following interesting note entered in February 1679: "I boiled an ox-foot or cow heel for four hours or more [in his pressure cooker] upon a moderate fire. The flesh was excellently well boiled and the bones were so soft that they might be cut with a knife and eaten like cheese. The juice did concrete into a very firm jelly."

Thus Papin had manufactured his first gelatin; he had given the housewife her pressure cooker and the bacteriologist his autoclave.

Papin's "marmite autoclave," as it was called, was carefully described in 1681 under the title of "A New Digestor or Engine for Softening Bones, Containing the Description of Its Make and Use in Cookery, Voyages at Sea, Confectionary, Making of Drinks, Etc." Papin's invention even included a safety valve so that the steam pressure could be regulated. Among Papin's many other inventions was a steamboat, which was destroyed in 1707 by jealous boatmen on the river Weser in Germany. The nutrition student will remember him not so much for his steam engines or pressure cookers as for the fact that he gave the world gelatin.

Papin tried to interest the English king, Charles II, in his new food, but it was only ridiculed. The thrifty French, however, liked the idea of making food in large amounts from a few bones, and gelatin was soon used extensively in France, especially in the hospitals. In Auvergne in 1760 the French priests saved their people from starvation by the use of gelatin; at the same time, Watt was adding a piston to the digestor of Papin and thus making one of the greatest advances in developing the steam engine.

Gelatin reached its greatest prominence as a foodstuff during the time of the French Revolution, when many of the poor in France were faced with starvation. Under the leadership of an enthusiast, D'Arcet, the government by official orders promoted the feeding of gelatin to the poor. After the revolution and in the early part of the nineteenth century the butcher shops of France retailed a popular dish consisting of pork gelatin and chicken giblets. Many a man might wish that our modern housewives had not forgotten this delicacy.

D'Arcet was so enthusiastic about gelatin that he claimed the food from a beef carcass could be increased by one-fourth if the bones were processed in Papin's digestor. This led to many debates, and the matter was submitted to the French Academy for study.

UNDER the leadership of the great physiologist François Magendie many classic experiments were performed to determine the nutritive value of gelatin and other substances. The final report of these studies, which appeared in 1841, has been so fundamental to all our modern advances in scientific nutrition that it will live as long as this science exists.

Before Magendie started his work it was thought that animals might get their nitrogen by taking it from the air as do the leguminous plants, such as beans and peas; but his studies proved that animals must get their nitrogen from food which they consume.

Furthermore, he showed that dogs could not live on sugar, fat or gelatin alone, although they could subsist indefinitely on meat alone. As if these studies were not enough to insure Magendie a place among the immortals of scientific nutrition, he observed that when dogs

were fed only sugar, cataracts developed over their eyes, while in those fed olive oil they did not. Thus Magendie recorded the results of vitamin A deficiency a whole century before the Nobel prize was awarded to F. G. Hopkins for the rediscovery of this effect.

With these important contributions, gelatin did not rest on its laurels but continued to play an important part in advancing the science of nutrition. About seventy-five years ago, or some twenty years after the report of the French scientist, the scene shifted to Germany where Carl Voit and other German workers became interested in the ability of dogs to digest bones. They found that dogs digested bones quite well and that the nitrogen of the bones served as food but that it was not sufficient to keep the dogs from wasting away and dying. They concluded in later studies with gelatin itself that this product could spare the body proteins but was not sufficient in itself to replace meat in the dog's diet.

In 1876 another report appeared which history should accord a place beside that granted to the observations of Magendie, but unfortunately it still lies forgotten and neglected by most nutritionists. In that year, Escher in Switzerland announced that gelatin was much better as a diet for dogs when it was fed with the amino-acid tyrosine. Now the nutrition student is taught that amino-acids are like the letters of the alphabet in that they are put together in various combinations to form the different proteins such as those in meat, fish or eggs. Escher's discovery of sixty years ago was the first inkling that a few of the amino-acids were absolutely necessary for animals to have. From this time onward, every one agreed that food nitrogen is not enough but that this nitrogen must be present in the form of these essential amino-acids. After many years and many more experiments it was well established that gelatin was an incomplete protein but was satisfactory if eaten with other proteins such as those of meat or milk to provide the amino-acids, such as tyrosine, which gelatin lacks.

In the past thirty years, gelatin has served time and again as a tool for the researcher because it makes it possible for him to feed an animal a diet that lacks essential amino-acids. With only gelatin these animals will not grow. If a researcher wants to test another food to see whether it has the essential amino-acids, he feeds it to the stunted animals. If they grow normally, he knows that the essential amino-acids are in the tested food. In this way gelatin has led to the recognition of the dietary value of complete proteins (with all the essential amino-acids), such as those found in meat and milk.

Today, gelatin, the chameleon among proteins, is appearing again in a new field of interest and importance to the nutritionist. For many years the student in nutrition has looked on glycine as the eighth grade student does on the spelling of "cat." In other words, glycine was thought to be about the simplest of the amino-acids and not particularly important because the animal body seemed able to make it in large amounts, nearly as easily as it does the carbon dioxide exhaled from the lungs.

Recently, however, evidence has accumulated to show that glycine has amazing powers to relieve some diseases of the muscles. These degenerative changes, in cases in which children were paralyzed and unable to walk, have been cured in many cases by feeding large amounts of glycine. So it is that our old friend gelatin appears on the stage again because it is one of the foods richest in this valuable substance.

No one can anticipate where these new discoveries concerning glycine and the relief of muscle dystrophies will lead. Who can prophesy the next color of this astonishing chameleon among proteins called gelatin?

THE THRIFTY FRENCH LIKED THE IDEA OF MAKING FOOD IN LARGE AMOUNTS FROM A FEW BONES, SO GELATIN WAS USED EXTENSIVELY IN THEIR HOSPITALS.

By CLIVE M. McCAY

THE COLLEGE C(O)URSE

By REGINA J. WOODY

THE COLLEGE course which children pursue for six years between the ages of 12 and 18 is beginning to hang over the educational opportunities of millions of our children today like the "college curse"—as it was called by an illiterate and annoyed mountaineer mother when her son was refused admittance. Instead of looming like a bright star on the horizon, beckoning the younger generation to security and higher learning, college has become for many of them a will of the wisp luring them on to disaster, so that when they fail to pass the college board examinations they permit themselves the luxury of despair and acquire a fairly impenetrable inferiority complex which may prove a considerable handicap to them for many years.

This defeatist attitude is utterly unnecessary and is caused almost entirely by the parents' desire to have their child in the "college prep course" at high school and thus prove to their neighbors and themselves that Johnny is just as smart as that ornery snip Marilyn-Grace who is always on the honor roll. Indeed, almost the

whole serious and trying situation is attributable to a lack of understanding of the principal facts of education and is traceable back to the eighth year of school when the choice must be made between the three courses: college, commercial and vocational.

Choosing the right course is more difficult than would appear at first sight, for there are three things to be taken into consideration if the results are to be equally satisfactory to the child, the school and the parent. The first consideration is the course the child wants to enter; the second is the course which his marks will permit him to enter, while the third consideration is the amount of money the parent can afford to allow him to spend on his education.

The most important of the three factors involved is, of course, the last one, for few students can go on to college unless their parents are able to pay their board and tuition or are at least able to forego their earnings while they are working their way through college on a part scholarship basis.

Actually, the prevailing opinion of our prominent educators today seems to be that the child's parents are his greatest handicap. This is a serious indictment of a group of individuals who in reality have only their children's welfare at heart but are mistakenly pushing and prodding them in the wrong direction.

Far too many parents fail to consider that college will not make their child self supporting; rather will it be an expensive additional four years of education at a conservative estimate of twelve hundred dollars a year. Even when the four years are over, the chances of placement in a paying job are little better than they were when the child was graduated from high school. To be sure, he knows more of each subject, but he may not have been intensively trained for anything save further study in an engineering school, in medical school or in a law school. Girl graduates who are not careerists along these lines eventually take a course in a secretarial school, learn typing and shorthand, and go into the same business offices, five years later, as did the girls who graduated from the commercial course in high school. Unquestionably the four years of education they have received in college, the poise and the ability to think for themselves which they have learned in that time will tip the scales in their favor when there is a chance of promotion. Nevertheless, it behooves parents to consider carefully if they have four or five thousand dollars to spend with only that end in view.

Some persons find it easier to understand the necessity of routing their children through education when they learn that every boy or girl who enters college will be put on one track or another of a planned and carefully set schedule. In every university, students must decide their major interest when they enroll and then plan their courses to point the way to their future careers. The budding scientist takes a different course than does the boy who plans to teach romance languages. The girl who is studying ancient history is assisted in selecting courses in her subject. If she chose blindly and without proper guidance, she might otherwise find herself a chemist on graduation. There are so many and such varied opportunities for study!

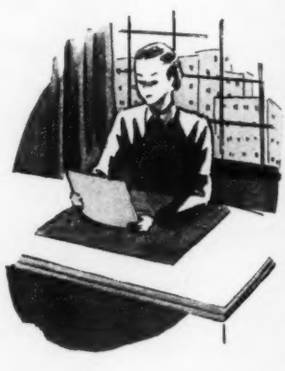
These facts are well understood about colleges; but that they apply equally to junior and senior high schools is in many instances quite unknown to the persons who really ought to know them; that is, the children and their parents. Because so many mothers and fathers are overanxious to give their child the best education they can afford, they often insist on college preparatory work in junior high school, perhaps because it is sometimes known colloquially among the children as the "high eighth." It is also "the thing" to take college prep if by any chance you can get into it, regardless of whether you plan to go to college.

Fortunately for those children who are 16 when they graduate from junior high and must go to work, the straight track of education branches three ways at the eighth grade, and they may choose between college, commercial or vocational training. The student who is looking forward to a job, whose marks are high, whose arithmetic is good and who is clever with his hands should choose the commercial course rather than the college prep course. Here, typing, stenography and salesmanship will be taught him, and before he leaves school, even bookkeeping and filing will hold no terrors for him. Boys usually have in addition to this work a little manual training, while girls learn some sewing, designing and cooking. These young people then are prepared to go out into the world under the guidance of their school's vocational employment bureau and make good in a truly satisfactory way. Students whose marks are low usually have no choice of courses and must enter vocational school because of grim necessity, though this is not always true by any means, for some children enjoy and excel in vocational subjects and prefer carpentering, sewing or cooking to stenography or salesmanship.

Indeed, once it is possible to convince parents and children that the marks required to get into the commercial course must be just as high as those which admit to the college preparatory course, the commercial course will come into its own. Perhaps the real trouble with letting a bright child concentrate on the college course is that college preparatory training instead of benefiting him will actually leave him stranded, an educational misfit in a business world, where jobs consist mainly of stenography, salesmanship, typing, filing, plumbing and gas-fitting.

Children whose parents insist on college prep training and then omit the really important matter of sending them on to college, insisting that they get a job instead because a "high school education is plenty," are likely to have a situation in their home which parallels the following case. Julia was a smart child and because of her sweetness and charm had been welcomed to play with the children of much more well-to-do parents. On entering junior high school her marks entitled her to the college course, and her parents pleaded with the superintendent to let her stay with her friends. On graduating from senior high school her friends went on to college while she stayed behind to look for a job. The school employment bureau could not place Julia. She knew nothing which would help her in a business office. Her tastes were far beyond her income; she was ashamed of having to go to work, and she grew more morose and moody as the weeks went by and no suitable job could be found. She finally developed a serious inferiority complex and accepted by force of necessity a job inspecting radio tubes in a factory; it was clean, steady work, to be sure, at $14 a week, but for one of her mental ability and charm a real penance. To make matters worse, it was the kind of job which carried with it no promise of future achievement.

On the other hand there is Harriet's case. Harriet was gay, intelligent and smart. Though the family was in straitened circumstances due to the depression and her mother's increasing blindness, the fact that both her father and two brothers held jobs of sorts might have led her to hope for college. She told, rather than asked, her parents what course she desired to elect and entered the commercial course at high school despite the fact that she ranked third in a class of 400 and was therefore well aware that she was "college material." With ease she bridged the caste line between commercial and college courses and, though born on the "wrong side of the tracks," figuratively speaking, attended the snobbish fortnightlies and was invited to the country club dances quite regularly. On graduation she entered the employ of a large store, and before she was 21 she was holding a position of responsibility paying $40 a week, with opportunities of advancement all about her.



Perhaps the moral of these two tales is that if girls are going directly from high school to work, they'll be happier and more successful in their work if they take the commercial course. On reading these two case histories we see instantly that that was so. But what of girls who don't have such high scholastic ability? Annie, for instance, was a kind, slow, rather lethargic girl who by no hook or crook could get herself the grades necessary to permit her to enter either the college or the commercial course. Though her parents pleaded tearfully, she was refused admittance to the business course, for her figures never added up twice the same way, while her spelling, though containing more than enough letters, seldom had them in the proper places. Into vocational school she went under protest and there, after a year of dour and surly behavior, began to design and make such attractive undergarments that they sold to her classmates on sight. Then and there a designer was born, and the poor stupid Annie who couldn't get into "High A" got herself a job at $18 a week when she was 17 years old. Annie is still creating smart underwear and is immensely happy. Success is really in her, and stodgy Annie is now Anne, a gay and efficient young business woman with a salary of $35.

Luella was real college material. She had a good brain; high marks weren't hard to get; she loved to study, and her family was comfortably well-to-do. The chances were good that Luella never would want a paying job. Rather she would marry and make an excellent wife and mother. Luella got her diploma from high school in the college course, attended a small, select woman's college, conducted herself creditably, won several honors and was class president. All over these United States there are thousands of such girls who are able to go through college prep courses in sanguine confidence that college itself will come along as inevitably as do college board exams. These girls are able to profit in every way from the college prep courses which they pass so easily in high school. In addition, these girls almost invariably get good and interesting jobs if they need them, once they are graduated from college.

Boys whose families insist on college ought to take heed of these cases, but for fear they won't because the cases cited were girls' case histories, let's consider Jonathan, a six-footer, a letter man from the day he made his first sand-lot team, and smart into the bargain. He romped through grade school with high marks, but only because the work was easy for him. He never studied; instead he built model airplanes and boats. Unfortunately, his parents had settled on seeing him become a minister; so Jonathan was placed in the college course. His marks were disgraceful, and soon he was shifted to the commercial course. There again he was a dismal and utter failure in both stenography and typing. Into vocational school he went, and began to work with a will. He ignored his anguished parents' pleas to go back into the college preparatory course and get into college. He even disregarded such rewards as the promise of a new car or a trip to Europe. His new enthusiasm was only exceeded by the extraordinary things he tried to make in the woodworking shop. Nevertheless in less than three years, Jonathan was turning out unusual and quite lovely modernistic furniture and graduated straight into a job paying $40 a week in a factory in the Middle West, where even now he is a most expert and promising young craftsman.

On the other hand, Bill's family didn't have a cent, and though he was first in his class of approximately 600, college seemed a mythical place until scholarships handed it to him on a silver platter. At college he continued to make remarkable grades and later went abroad on another scholarship for foreign study.

James was a small, serious, timid fellow who tried hard but who never got very good marks in anything. He was pleasant and quick with his hands, and after careful study of his report cards his parents decided against college prep, so James was put into the commercial course. His marks hardly warranted the course, but the superintendent was an open-minded man. James became alive when he studied typewriting and stenography. Two years later on graduation he was fast becoming a really rapid typist, and as his stenography was keeping pace with his flying fingers, he was planning to go into the court stenographers' field. James, the timid, has vanished, and an active, alert, rather aggressive youth has taken his place. James is no longer inferior. He's a "whizz" at his machine, and every one who hears him knows it. Needless to say, James is quite happy.

One astonishing thing about the commercial course for boys is that there never are enough boys graduating from it to fill the demand.

The director of the employment bureau in one of our largest high schools states that never was his school without a waiting list of employers for boys graduating from commercial course.

Carl was a difficult problem, one of many hundred with which every vocational high school must deal. Carl was definitely a poor student, a bit of a communist with a seriously underdeveloped mind in an overdeveloped body. Carl couldn't take either college or commercial training, and at vocational school he was a laggard and a dullard. A course in civics interested him, curiously enough, and on being permitted to run errands for the school principal and join the school band he actually began to look alive and interested. Carl really graduated and is delivering orders for a grocery store now, while as a side-line he has a small band which plays loudly and quite unmusically for many of the school groups which wish a bit of lively noise about. Carl was a surprise to every one but the vocational school psychologist who set him on the right path and cheated the prison system by using up his energy in the right way. Despite communist rallies and street corner rowdies, Carl remains steadfast and lately has been elected to the Crusaders, who are the junior members of a real police force, have authority to direct traffic in emergencies and bring unruly members of society before the court. Carl is an almost perfect example of what vocational guidance can do in helping a boy realize his best possibilities and still save taxpayers money.

The far-seeing parents, then, are they who check carefully on the child's ability when he reaches 12 years and the time approaches for the decision as to which course he will pursue in junior and senior high school. They study report cards; they talk over the child's hobbies and tendencies in a detached manner. Finances come in here and decide once and for all how many more years of schooling are possible. At this point the parent should be painfully honest with himself, for such honesty is going to help his child in his future life a hundredfold. Once the parents see the child as clearly as it is possible for love-blinded dear ones to see him, they then try to learn from him which course he wants to enter and why he thinks he will do well in it. If what he desires is financially impossible, this is the time to tell him so and together hunt for an alternative which will make him reasonably happy. If it is a question of marks rather than money, they may leave the matter to the school, thus keeping clear of a situation which no parent can change. After making sure that they know all the facts, the child and both parents ask for an interview with the guidance clinic director and the principal of the school. Once again report cards will be in evidence, and the child will learn, perhaps for the first time, that his marks, his behavior and his effort in all his past school years really do add up to something after all. No doubt he will also discover for the first time that he has "latent capacity" to succeed. But this is all to the good. It is sometimes just the spur needed to make the shiftless, "what's the use" type of child wake up and work.

With parents, child, principal and guidance director present and the child's own school record in front of him, no child can feel he is being railroaded into a certain course or that he is not being given credit for achievement. On the other hand, most children will feel that they are being taken much too seriously and will not like it overmuch. In the end, though, the child will feel secure and stable because of this interview; the parents will profit by it too, for in the right course every child can succeed to the best of his ability, which in all honesty is all one can ask, and the school will profit from not having to juggle misfits about from class to class a half dozen times in one year.

It is important nowadays that every child get every whit as good an education as he can assimilate and profit by. School standards in the college course should be high enough to insure passing the college board examinations with ease. The standards of the commercial course should be high enough to please the business men of the community and keep them desirous of placing the graduates. The vocational school should leave no stone unturned to provide every possible kind of training. When this is done, the public high schools have done their work well and are a credit to the town or city they represent, for they are thereby causing the young folks of the community to grow in stature and in wisdom.

Parents will do well to remember that the college prep course must of necessity be too hard for at least 80 per cent of the students. If it isn't, children who want to go to college will fail to pass the college board examinations. No sadder sight is to be seen round the tenth of July than the student who has failed in his college entrance examinations because his school's standards were not high enough to prepare him properly for them—no sadder sight than this, perhaps I ought to say, save that of the boy or girl who is being forced to swallow a college education by spoon feeding, who hates it, who finds study difficult, and who longs for the freedom of spirit he might have outside in the business world.

The fact that a child has such overwhelming talent along one line that he shirks all other study should be just cause for rejoicing on the part of the parent. No wise person will ever attempt to make his child conform to the routine life of the multitude if he is honestly one of the elect. Genius walks its path alone, proudly and happily. *(Continued on page 830)*

WHAT CAN BE DONE FOR ARTHRITIS

(Continued from page 787)

fore be highly nutritious, consisting of anything and everything they can enjoy and digest. Plain cod liver oil, if well tolerated, is especially recommended, and a gain in weight is usually a favorable sign. Iron should be taken for the anemia.

No medicine or drug has yet been shown to influence favorably the course of rheumatoid arthritis. Drugs are given to relieve pain.

In the past, vaccines and injections have been popular in the treatment of rheumatoid arthritis, but the trend of recent work has rather been to discourage their use.

After the more active stages of the disease have subsided, many forms of physical therapy, such as baking, massage, baths and diathermy, are of particular value.

Some patients with severe rheumatoid arthritis have benefited greatly by removal to a tropical or semitropical country where the warmth of the climate has had a definitely favorable effect.

Finally, and perhaps most important of all, try to relieve your mind of all possible worries and anxieties. This may be difficult or even impossible, but there is no doubt that constant mental and emotional strain exerts a tremendous influence on this disease.

A few words of warning may save you money and protect you from false hopes and disappointments. Beware of drugs and "patent medicines"; beware of any highly advertised new treatments. There have been hundreds of these recommended, sometimes extravagantly: fever therapy, gold salts, colloidal sulfur, milk injections, colonic irrigations, x-ray treatments, special diets and so on. Let your doctor decide about these. All over the country there are doctors and research workers trying to discover treatments which will alleviate or cure this disease. When such treatment is found your family doctor will know of it, and until then he can, in the majority of cases, care and prescribe for you as well as the highest paid arthritic specialist.

These, then, are the different types of treatment which will give you relief if you are suffering from rheumatoid arthritis: rest; good wholesome and nourishing food; splints to prevent deformities; bakings; a warm even climate, preferably in the tropics, and, above all, freedom from worries and anxieties.

You who can afford these things under the direction of your own physician will undoubtedly improve. But what of the tragic thousands who can't afford these benefits—who can't afford to rest; who must work till they drop and suffer while they work? Every year in the clinics of the great hospitals of this country are seen thousands of such patients, their own means exhausted, their working powers ruined, thrusting ceaseless financial and physical care on relatives who can ill afford their meager help. They come to the hospital, these pitiful chronic sufferers, and few hospitals can take them in. Doctors know how great is their need; but when will the people of America awaken to this real emergency? When will they do as much for arthritis as they have done for tuberculosis, for cancer or for infantile paralysis? The medical profession is doing all it can, but the problem is too big for them alone. The conscience of the public must be aroused; private benefactors must come forward, and state and federal authorities must provide institutions. Then, and then only, will the pain, the suffering and the deformity of chronic arthritis be truly alleviated.

A BANDEAU, ROLANDO!

By PARK J. WHITE JR.

Now, woe is me!
What do I see?
O lamentable diagnosis!
To Dorothy
Catastrophe
Has come in lavish overdoses!

Her head is wrapped
With overlapped
And intertwined encircling bandage.
It's all too clear
That my poor dear
Has been the victim of brigandage!

Or else some germ's
Malicious squirms
Have stricken Dotty just to fright us!—
Now—what blessing!—
Convalescing
From streptococcus mastoiditis!

Some collision?
Or incision?
Neither one, poor dumb Rolando!
She has gone
As all have done,
And bought herself a new white bandeau!

When Busyness Is a Pleasure

Ewing Galloway

A stamp is a token of travel. Here is one of the thousands of boys who, young and old, heed the lure of a vicarious voyage and adopt philately as their passport to lands far away. British New Guinea, Korea, Czechoslovakia, Nicaragua and Chile all come to the stamp traveler in an endless parade of perforations and surcharges.

Willabel Cole Mitchell

The arts have youthful participants as well as patrons. The pretty water colors and the smooth feeling of putty are as fascinating to the eyes and fingers of children as they are to older artists.

Acme

RADIO MEDICO

By Robert Toubib

DESTROYER SQUADRON number sixteen, homeward bound from Constantinople, was lumbering its way through the sea which a half gale had kicked up off the Azores.

Taking care that his six feet height did not bring the brown shock of his head into dangerous contact with the low overhead, Henry Howard, only medical officer for the six vessels of the squadron, balanced his way along the short passage leading from the officers' rooms aft to the wardroom of the U. S. S. *Wolf*.

In the wardroom he found the dinner table fixed to the steel deck, and on the table fiddles held the necessary dishes in place. A heavy rope around the six chairs bound them firmly against the table.

Four officers were already in the room. The sixth chair was for the watch officer, now on the bridge. Henry, like the others, deftly stepped over the back of his chair into his seat at the table. A Filipino mess attendant poured soup into his plate while Henry kept it horizontal in spite of the gyrations of the ship.

Before he could begin to eat, a door burst open, and a puff of spray blew in. When the door banged, the spray apparently condensed itself into a dripping bluejacket.

The sailor braced himself against a stanchion back of Dr. Howard's chair.

"Doctor," he said, "the chief pharmacist's mate on the *Hawk* has got an awful sick man over there and wants you to see him."

Henry handed his soup to the chief engineer, who had not yet been served, and extricated his wiry form from his chair. Turning to the captain, who was seated at the head of the table, he asked, "Captain, can I get over to the *Hawk?*"

"No, Surge. That man might be awfully sick, but not so sick that drowning a doctor and a boat's crew will do him any good."

"It can't be done?" insisted the surgeon earnestly.

"No *sir!*"

Dr. Howard steadied himself with the convenient stanchion and was silent a moment.

"Let me use the radio telephone then," he requested.

"Surge," replied the skipper, "the ship's yours except for purposes of suicide."

Henry got into oilskins and sou'wester and made the best of his way out over the top of the wardroom to the radio shack.

"Get the chief pharmacist's mate of the *Hawk* on the phone," ordered the surgeon.

"Aye, aye, sir," answered the radio man and set to work with dials, dots and dashes. The apparatus lacked much of the perfection of those of today, and it was five minutes before the head phone was turned over to Henry.

"What's the story, chief?" he asked the chief pharmacist's mate of the *Hawk*.

Punctuated with buzzing and cracklings which made communication most tedious, these facts were finally gleaned: Adolph Skortz, machinist's mate, third class, had been in perfect health until he came on deck soaked with sweat the previous evening. He had a shaking chill three hours later. The chief, who had seen a lot of malaria in Santo Domingo with the marines, gave him quinine. The patient was worse this morning; had high fever, headache and pains all over, especially in his back and chest.

"Wish I had a microscope," he concluded. "I'd like to do a white count and a blood smear."

"Has the man been in the South or the tropics?" asked Henry.

"Only south with the fleet, never on shore duty. But he's been in the Near East a year. Might have picked up malaria there."

"What's his T.P.R.?"

"I just took it: temperature 104.3, pulse 124 and respiration 25," answered the chief. "Pulse beats like a hammer," he added.

"What's his coloring? Is his face pale or flushed?"

"He's red as a beet."

"Where do you have him, chief?" Henry knew the problem of finding a place for a sick man aboard a destroyer.

"In his regular bunk in the crew's compartment. There isn't any place else to put him."

Dr. Howard considered a moment: exposure, sudden onset, chill, malaise, pain in chest, injected face and bounding pulse. All that and the fact that the pulse had gone up in about the same proportion as had the temperature were against the chief's guess of malaria. Besides, Henry had been with the squadron in the Near East for a year, too. He had seen that careful precautions had been taken and, moreover, could not recall a recent case of malaria.

"Chief," said Henry, "your man must have pneumonia. Has he any cough?"

"He did begin to cough a little this morning, Doctor, but he doesn't bring anything up."

"Well, for the time being, anyhow, treat him as for pneumonia: strictly bed patient, prop him up a little . . ."

"Doctor, I can't do that in his bunk," objected the chief.

"I'm coming to that. Go to your skipper; tell him what I say, and ask for one of the officers' rooms. But give your patient a quarter of morphine *stat.* By the time the room is ready he can be moved without discomfort with your Stokes stretcher. You sleep in the room, too, on a cot or in the upper bunk, if there is one. . . ."

And Henry proceeded to give the details about the care of his unseen patient and the precautions to be taken. He closed with the order: "I'll call you again at 1900 [7 p. m.]. Be ready to report."

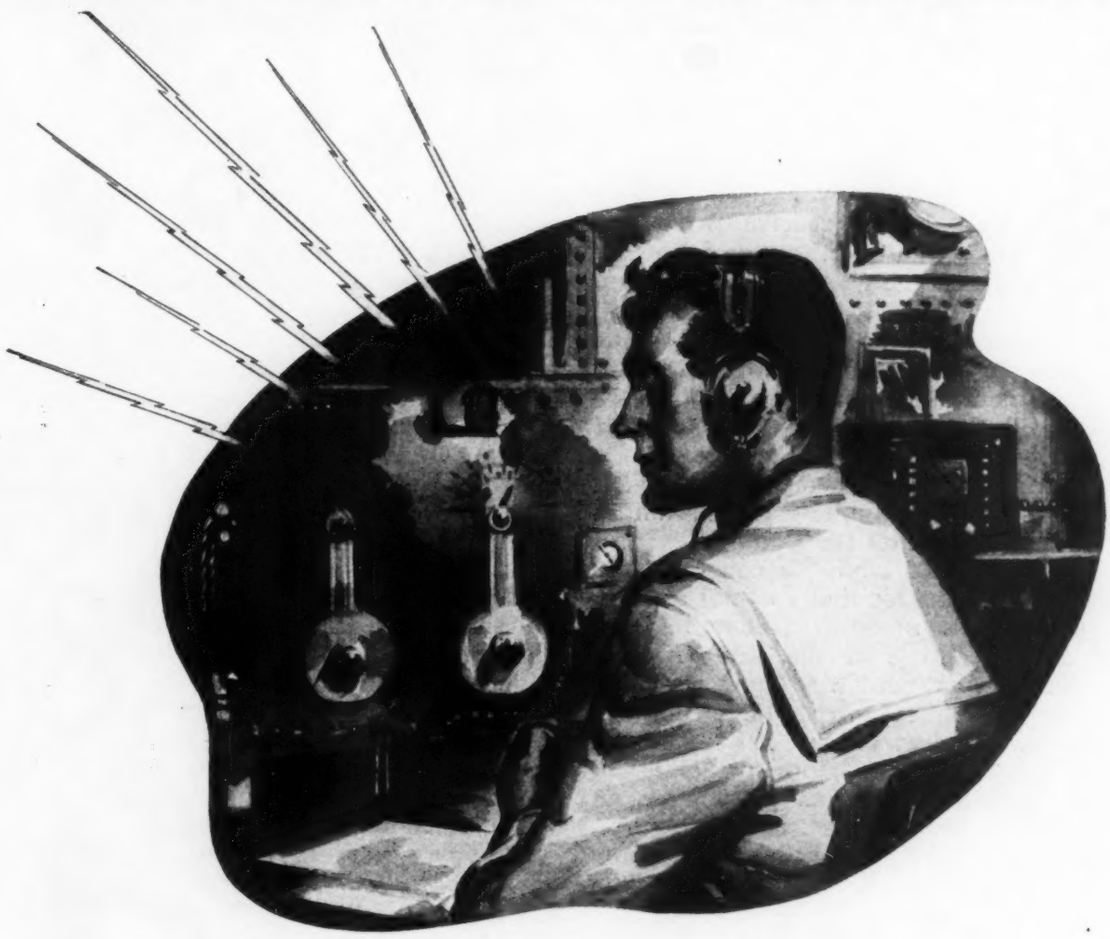
"But, Doctor, suppose the captain won't give me a room. What'll I do then?"

Henry ignored the question. He continued, "Call me at any time if anything goes wrong."

Henry returned to the wardroom and his soup. But before he again climbed into his seat at the table, a thought flashed through his mind which made him smile at himself: He had not thoroughly washed his hands after treating a pneumonia patient. No chance of carrying infection from the patient this time.

"How did you make out, Surge?" inquired the skipper. Then he added considerately, "But first catch up on your chow."

When Henry finished his soup and began his attack on a slice of mutton which did not require the same continuous attention to equilibrium, he replied, "I believe I made out pretty well. At least I can't kill my patient by too enthusiastic use of the stethoscope. But I would like a two minute examination of that man's chest to confirm my diagnosis. Some day, when you learn to strain the crackles out of the radio,



we can hook up with a radio and at least listen to the heart and lungs."

When Henry returned to the radio shack at 7 that evening, he found the chief pharmacist's mate of the *Hawk* waiting for him on the radio phone and anxious to make his report.

"Everything is fixed up just like you told me, Doctor," he said with an enthusiasm which overcame the radio interference. "Captain Hobbs was fine. Said you treated him for pneumonia at the Naval Academy, and anything you want you can have. If you say the word, he'll ask to put back to Ponta Delgada and send the patient ashore."

Henry cut into the chief's effusion with a question.

"Oh, the room," resumed the chief. "The captain gave me his own room and has moved up into the emergency cabin on the bridge. Yes, sir! And he detailed a yeoman who has done a cruise as a hospital corpsman to help me . . ."

Again the doctor guided the chief back to essentials.

"Oh, yes, the patient. There's not much change in his temperature, pulse and respiration, but he seems more comfortable. . . . Yes, he does cough more, and he's bringing up stuff that looks bad—like prune juice."

That too vivid "prune juice" confirmed the diagnosis of pneumonia as well as Henry could have done it at the patient's bedside. And as he asked questions and directed treatment he thought what a help it would be if the new serum treatment of pneumonia were possible in this case. Well, there was nothing to do but treat the patient along symptomatic lines.

Every morning and every evening Henry held his radio sickcall. He received a careful report and outlined treatment for the following period. In three days the weather settled down, and as the oil supply of two of the "tin cans" of the squadron was running low the ships slowed down to the economic speed. Life became more nearly comfortable.

"Surge," said the captain of the *Wolf*, "if you want to take a chance—because it still would be taking a chance in my little gig—I'll ask the squadron commander's permission to stop, and we'll put you on the *Hawk*."

Surge asked himself what he could do for a sick man on a destroyer that was not already being done for his patient. Henry had an excellent clinical image of the case; he felt assured that his treatment was being carefully followed, and the patient was holding his own. Was it worth a "chance" for a boat's crew and himself? Should he stop two ships in mid-Atlantic when there was no longer an emergency?

"Skipper," he said, "everything is going smoothly. I'll stay aboard, at least for the present."

Henry's decision proved correct. The next morning the chief added the sputtering of his enthusiasm to the sputtering of the radio: "Everything's fine. His temperature is 98.4, pulse 68 and respiration 18."

The patient had had his crisis during the night, and the chief proceeded to give a description which, except for diction, might have come out of a textbook of medicine. Henry curbed the chief's optimism and insisted that the patient remain a strictly bed patient. "Yes, in the captain's bed."

Two days later the *Wolf* and the *Hawk* rounded Cape May and started up the Delaware toward Philadelphia.

"Is it all right for convalescent pneumonia case to go on leave?" radioed the *Hawk*.

Henry answered: "Transfer Skortz to Naval Hospital as stretcher case repeat as stretcher case."

THREE years of shore duty passed. Henry was now medical officer of the cruiser *Harrisburg*. That vessel was in the Bay of Biscay on her way from Gibraltar to Havre when an Italian tramp steamer radioed for help. A seaman had torn his leg on a hatch coaming, and the bleeding could not be controlled. Henry consulted the Italian-born chief steward and sent the instructions: "Place tourniquet above knee and tighten until bleeding stops stop loosen after one half hour trying to control bleeding with pressure of compress over wound stop replace tourniquet if bleeding cannot be controlled."

In the meantime the *Harrisburg* looked for the Italian tramp. But it was 2 a. m. before the tramp was located. The trip of Henry and his operating room hospital corpsman from the *Harrisburg* to the tramp in the middle of the Bay of Biscay in the small hours of the morning has potentialities for drama. As a matter of fact the transit was comfortably and safely made in the *Harrisburg's* big motorboat.

Henry found and ligated the bleeder. The wound was cleansed, sterilized and sutured. It was all carried out so easily that Henry, two months after, was surprised to receive a letter through official channels from the Italian government, commending him for his work.

WHEN the dressing of the wound was finished Henry accepted a glass of brandy from the Italian captain and returned to his ship. He did not expect to find his chief pharmacist's mate awake and waiting on deck for him.

"Have any trouble, Doctor?" asked the chief.

"No, not a bit. That's the first radio medicine I've done since I was on the *Wolf* and treated a case of pneumonia on the *Hawk*."

The chief looked up astonished.

"Ah, you were the doctor on the *Wolf*. I never knew. I was the chief pharmacist's mate of the *Hawk*."

THOMAS SYDENHAM

(1624 - 1689)

THE FATHER OF CLINICAL MEDICINE

By ADOLPH BEILIN

POSSESSED OF an independent spirit, Thomas Sydenham was vehemently opposed to vain speculation and authoritative presumptions in the diagnosis and treatment of disease. He preferred to depend mostly on close observation of both the patient and his symptoms. His descriptions of many diseases are still regarded as classics in medical writings. Sydenham's detailed descriptions of scarlet fever, gout, chorea and hysteria are among the most famous.

In his broad sympathy and kindly interest in his patients, in his conservative treatment and in the advocacy of fresh air and moderation in all things, he approached the modern physician more nearly than any man of his time. He definitely separated chorea from the St. Vitus' dance of the Middle Ages, and he described measles correctly. His views on the nature and variation of epidemics were likewise sound. He cared little for theory. He adhered to his method of watching at the bedside and recording all the symptoms. The results of these observations he set forth in a book, together with his treatments and diagnoses, and it was through the medium of this book that he gave a new birth to clinical medicine.

Thomas Sydenham was born at Dorset, England, in 1624. He came from a Puritan family which dates back to King John. At the age of 18 he matriculated as a fellow commoner in Magdalen Hall, Oxford; but owing to

the outbreak of civil war his career as a student was cut short. In 1646 he decided to study medicine, and he entered Wadham College. From this college he received the degree of Master of Arts. In 1648 he was "created" a Bachelor of Medicine by order of the Earl of Pembroke. Sydenham next received a fellowship in All Souls' College. After leaving Oxford in 1655, he settled in London. Later he went to Montpellier to attend the clinical lectures of Charles Barbeirac. Returning to London in 1661, he was admitted to a licentiate of the College of Physicians. He left London again during the plague, and it was while he was away that he wrote his first medical treatise. Sydenham has been called the British Hippocrates because in his studies and practice he followed in the footsteps of the Father of Medicine.

During his lifetime, Sydenham was honored by most of the eminent men of his own profession. Broken by disease in his advanced age, he still persevered in healing others, and he kept on striving to advance the science of medicine. He ended his last work with these words: "I cannot refrain from endeavouring to relieve the sufferings of others even at the expense of my own health." He died Dec. 29, 1689, and was buried in Westminster.

THE COLLEGE C(O)URSE

(Continued from page 822)

Suiting the course to the child in junior high school then is an individual problem which every parent ought to face squarely, realizing that no one of the three, college prep, commercial or vocational, is better than the other, save as they are better for the individual. If the wrong course is chosen, through blind pigheadedness in insisting on a smart-sounding course, then neither should the school nor the child be held responsible for any future failure.

Indeed, as parents recognize and welcome the need for obtaining expert analysis of their children by an outsider, as well as bringing intelligent understanding of their own to bear on the problem of the child's placement, the mistaken emphasis on the college prep courses will be over. No longer need a child be cut to fit the college course if he wants an education, as was necessary in years gone by. Such procrustean methods are quite out of date, for there are so many varieties of courses in our schools today that a child may easily be placed in the one best suited to bring out his good points and help him to self fulfilment. Indeed it is conceded nowadays that the ability to live in the world as a happy, well adjusted citizen is as important a thing to the average man as is a magna cum laude to a consecrated student. Education not only should educate but should prepare the student to live happily and earn his own living successfully in direct and friendly competition with his fellow-men.

BAD HABITS IN GOOD BABIES

(Continued from page 807)

child is rather immature, and it needs but a small stimulus to the stomach to induce expulsion of its contents. Every mother is acquainted with the frequency of vomiting as the initial symptom of almost any acute disease of childhood. Thus it is that vomiting usually commands a high premium for the child who is inclined to take advantage of the process; and be it remembered that in the baby it does not appear as an unpleasant indulgence. So far as is known, babies do not experience the nausea and sick feeling that precede vomiting among grown-ups.

For three weeks following his return from the hospital, Bobby Stephens ate and retained his food. Out of a clear sky the carrot feud was suddenly revived. The child was determined not to eat carrots. His mother was equally determined that he would. The child then adopted the attitude, "You can make me eat it, but you cannot make me keep it down." He vomits all other food in fair measure, though considerably less than is apparent. He is still gaining weight. To hear the dramatic story of his behavior, Bobby would be a dull boy if he failed to take advantage of the habit as a means to hold up his respectable end. Indeed he knows, "We are talking about him." With Swinburne one may say:

> Man, a dunce uncouth
> Errs in age and youth:
> Babies know the truth.

To Mrs. Stephens the child's lot is a hard one. She characterizes his infancy as stormy. For Bobby, however, the whole struggle may be likened to a greatly advertised drama with Robert Stephens Jr. as the central figure, the hero. And let it be understood that the best known idol of the American screen appears picayunish in pride and personal vanity when placed beside this vomiting little actor.

New Books on Health

THE STORY OF HUMAN ERROR

Edited by Joseph Jastrow. Cloth. Price, $3.50. Pp. 445. Illustrated. New York City: D. Appleton-Century Company, Inc., 1936.

THIS is a symposium volume which traces false leads in the development of science and shows their effects on development. Every one of the sciences is concerned; for example, Homer W. Smith writes of errors in physiology; C. Judson Herrick discusses errors in neurophysiology; error in medicine is considered by Howard W. Haggard, and error in psychiatry by Abraham Myerson. The volume is certainly stimulating to thought and throws many an interesting reflection on the advancement of scientific knowledge.

MORRIS FISHBEIN, M.D.

LIFE SAVING AND WATER SAFETY

Paper. Price, 60 cents. Pp. 267. Illustrated. Prepared by the American Red Cross. Philadelphia: P. Blakiston's Son & Co., Inc., 1937.

THIS BOOK presents clearly and completely the hazards met in water recreation and sports and tells how to deal with them. Several points are stressed, and these form the backbone of the entire thesis of water safety.

The personal element is discussed at length. Instead of either encouraging or deriding the practice of the morning dip, or cold plunge, it merely points out that this form of water sport is enjoyed by many physically rugged individuals and that for those other persons for whom a quick transition from warm bed to cold water is downright distasteful it may not only lack benefit but be actually injurious to health.

When to bathe, where to bathe and how long to stay in the water are all intelligently presented, and the reader is left with the impression that it is not a sign of lack of courage to refuse to undertake more than he knows he can safely accomplish but that water daredeviltry is silly and endangers one's own life as well as that of others.

The illustrations throughout the text are excellent and show concisely the various points brought out. All the forms of rescue from drowning are ably presented with many illustrations of proper technic. Good advice on how to construct bathing places and the various apparatus used is given.

A final chapter on prevention and rescue in ice accidents brings to a close a book that is a worthy companion to the "Red Cross Manual on First Aid." As such it demands a place in libraries of schools, camps and homes whose parents are seeking to provide their children with knowledge not always taught in the schoolroom.

P. A. TESCHNER, M.D.

THE CIRCUS COMES TO SCHOOL

By Averil Tibbels. Cloth. Price, $2.50. Pp. 242. Illustrated. New York: A. S. Barnes & Co., Inc., 1937.

TEACHERS and especially physical education instructors will welcome this "plan whereby the circus becomes recreational and educational." The circus is suggested as a physical education program because it has universal appeal to participants and spectators; because it will always have an appreciative audience; because it presents a never ending group of activities in which physical education may be utilized; because, unlike teacher-planned exhibitions, it is an outgrowth of pupil interest; because it automatically becomes a school activity involving cooperation with many departments, and because it brings compensations of many kinds, educational, social, physical and financial.

Two kinds of school circuses are described: the activity or project circus, the purpose of which is to stimulate learning and to open new experiences, intellectual, constructional, physical and esthetic; and the entertaining and fund raising circus.

Practically limitless possibilities are revealed for variety of endeavor; for the building of desirable habits and skills; for social contacts, both student group contacts and community contacts, and for increasing interest in literature, history, science, geography, health education, oral and written expression, and many other subjects and channels of interest.

Detailed instructions are given on how to organize a circus; how to plan the program; how to handle the innumerable details; in short, how to bring about a successful performance. No point has been too small for the author's consideration. As a result, the instructions and suggestions are so complete that they open intriguing fields for the teacher with enterprise and imagination and offer a workable, ready-made program even to the most unimaginative, who must inevitably be inspired by the swiftly moving spirit of these pages.

LEOLA J. HARRIS.

THE PSYCHOLOGY OF ADOLESCENCE

By Karl C. Garrison. Price, $3. Pp. 377. New York: Prentice-Hall, Inc., 1934.

ANOTHER excellent text on adolescence has made its appearance. Like most investigators who work in this field the author, Prof. Karl C. Garrison, acknowledges his indebtedness to Dr. G. Stanley Hall. A reproduction of Dr. Hall's picture adorns the first page. The purpose of the book is to apply to the study of the adolescent the recent observations of psychology so that students in college classes who are still in the latter stage of adolescence may understand themselves better and also may get a more critical appreciation of new studies now appearing. The book is sound in its content and well written but does not differ materially from several other books on adolescence which have recently appeared.

J. MACE ANDRESS.

(Continued on page 844)

TYPHOID

THE DOCTOR'S ARMCHAIR STORIES: II

By Fred O. Tonney

DOCTOR SMITHIES had put up his horse, rewarded him with a measure of oats and a manger of hay and now came stamping up the steps to the back door.

"Whew! What a night!" he exclaimed as he shut the door behind him.

Sonny, just getting ready for bed, heard him and ran to the door. "Hi, Dad," he called.

"Hello, Son."

"Oh, Mom! Dad's here." He hooked an arm up to his father's shoulder. "Are you hungry, Dad?"

"No, Son, I had a snack up at Hillside Farm."

"You're tired," said Mom. "I do wish you wouldn't work such hours!" She kissed him. "And Sonny misses you so, when you're late this way."

"Dad! Can I have a story?" piped Sonny. "I mean, one on what you did today, like we do sometimes?" He paused. "What kind of patient was it tonight, Dad? Was it very bad?"

"Pretty bad, Son. Typhoid, I think."

"Who?"

"Myra—up at Hillside Farm."

"Tell me about it, Dad."

"Oh, all right. But let's get settled in the old armchair. What say?" They trooped into the living-room. The old doctor took off his coat and cap and put them away in the closet. Then he sat down.

"Not sleepy?"

"Not *too* sleepy. Tell me about this typhoid that Myra has."

"Well, you see, it's been a long time since I've seen a case of typhoid in these parts. And it took me quite a while to be sure and to find out just how she might have picked it up."

"How did she, Dad?"

"From the well water on the farm, I figure. They had some company lately. One had been sick for quite a while, just getting better when she came." He paused.

"What's typhoid, Dad?"

"I'd better go back a bit, I guess. It's caused by a germ that gets into the bowels—called Eberth's bacillus or sometimes just the typhoid bacillus. Eberth was a doctor, you see."

"Like you, Dad?"

"Well, not exactly, Son. He worked in a laboratory, you know. He didn't go to see patients. He was what you call a scientist. And one day while working in his laboratory he found this germ, the one that causes typhoid."

"So that's why it's called Eberth's?"

"Yes, because he discovered it."

"What's it look like, Dad?"

"It is a little rodshaped germ as you see it under the microscope—like, oh, I'd say, like about half a cigaret."

"Does it move around, Dad?"

"Oh, yes! You can see lots of them—when they're alive, that is! They have several hair-like things along their sides that they swim with. These look something like legs and are called flagella."

The boy was astonished. "You can see them swimming? Right under the microscope?"

"Oh, yes, Son—hundreds of them, darting around, across and in circles. And say, do they move fast! It's even hard to watch any one of them—they're so speedy."

Sonny was thoughtful for a moment. "Well, Dad, what do these germs do in us—in Myra? How is it they cause this disease—typhoid, wasn't it you said?"

"It's this way, Son. These germs—they're really plants, you know, not bugs or animals—just hanker to live in our bodies."

"In what part of us?"

"In our bowels, mostly. That's where they like to set up housekeeping. So of course they

always try to get into us some way to live there and start raising families of little germs."

"And they don't care if they hurt us?"

"Well, Son, I guess they just don't know they're doing that!"

There was a pause.

"But, Dad, how do they get into us?"

"Oh, in lots of ways. Of course, they can't just jump up into our mouths, because they only live in liquids. So they manage to get into the things we take into our mouths."

"What things?"

"Oh, drinking water and milk and—well—just any of the victuals we eat."

"So that's the way they get in!" The boy thought a moment. "They're sneaks!" he said.

"Yes, I guess they are, Son."

"But, Dad, just how do these germs manage to get into our water and food? They must be pretty smart!"

"Oh, no, they're not! Not at all! It's only by accident or through carelessness or ignorance on our part."

"Well, how *do* they, Dad?"

"You see, Son, they always come in the first place from some other person who either has typhoid or is a typhoid carrier."

"What's a typhoid carrier, Dad?"

"A person who has the germs in his body but is not sick. That is, he has something in his blood that protects him against the poison of the germ, so it doesn't hurt him."

"But other people can get sick with this same germ?"

"Oh, yes! And how sick!"

"But, Dad, how is it that these typhoid germs can make people so sick?"

"Well, you see, wherever they live and grow, they make a strong poison."

"Mm-hmm!"

"And when they happen to get into somebody's bowels this poison smarts and burns the lining of the intestines, and it also soaks out into the blood, where it acts like a powerful drug, like opium, maybe."

"What does it do, Dad?"

"It makes the person sleepy and dopey and sometimes out of his head." The old doctor stopped to light his pipe. "And then the germs get into some little kernels in the intestines called lymph glands, and these swell up. Sometimes they're called Peyer's patches.

"Soon the lining of the intestines gets so sore and inflamed from the poison that the food cannot be digested, and this lasts for weeks and weeks."

"Doesn't the poor fellow get pretty weak then, Dad?"

"Oh, yes, he surely does. He can't get enough nourishment, and he is also in great danger of having a family of these germs eat right through his intestines."

"And make a hole, you mean, Dad?" Sonny asked.

"Yes, right out into the open cavity." The old man sighed. "The patients usually die then. Once in a while they can be saved by an operation to sew up the hole." There was an interval of quiet. "Of course, *sometimes* they get well by themselves, too." He paused again. "But for a long, long time after that, they are apt to be carriers of the germs."

"Eberth's germ, you mean, Dad?"

"Yes, that's the one. So they're a danger to others, you see."

Sonny thought for a long while. "But, Dad, you didn't tell me yet how this germ gets into our water or milk or food. How come, Dad?"

"One at a time, Son. Take drinking water, first. Water gets the germs mostly from sewage. Sewage is the name given to the wastes that come from toilet bowls, kitchen sinks and the like, which drain away from the house through pipes. If there is a person with typhoid there, the sewage carries the germ. This sewage sometimes comes from a big city which empties it into a lake or river nearby. Then, farther on down the river another city uses the same body of water for drinking purposes."

"And the water with the typhoid germs in it is pumped right to the faucets?"

"Yes, of course, it comes from the city that didn't treat the sewage properly. Then, after a while people in the next city get typhoid, too."

"I see, Dad. The germs sneaked into these people right from the kitchen tap!"

"Yes, that's right." He paused. "And then, sometimes in the country the well water gets these germs in it, too."

"How, Dad?"

"Mostly from outhouses which overflow when there's a lot of rain or which have underground connections with the well from which the family gets its drinking water."

"Myra, you mean?"

"Yes, Son, Myra! That's how she got it, I'm sure. You see, as I told you before, they had company three weeks ago up on Hillside Farm. One girl had been sick a long time, probably with typhoid. Of course she used the outhouse. Then there was a thaw and a heavy rain, and the outhouse overflowed into the well. That's how the germs got into Myra and started to raise germ families inside of her.

"Poor Myra! But Dad, what about milk? Couldn't she have gotten it from that?"

"Yes, maybe."

"How do these germs get into milk, Dad?"

"Oh, sometimes from washing the cans in dirty water. But more often from carriers who milk the cows and handle the milk."

"Men who work on dairy farms or in milk plants, you mean?"

"Yes. A typhoid carrier gets a job like that, and then sometimes he may be a bit careless about his personal habits. So he gets the germs on his fingers, forgets to wash and then handles the milk or maybe the cans or bottles and in that way leaves some of the germs there."

Sonny was shocked. "Why *don't* they wash their hands?" he cried.

"I guess they just forget, Son. They surely don't mean to do it!"

"So that's how the germs get into milk!"

"Yes, that's how. And they're much worse in milk than when they get into water!"

"Why, Daddy?"

"Because milk is such a good food for germs. They grow and grow in it, and pretty soon there are millions and trillions of them!"

"From just a few that got in at first?" He stopped, then hurried on, "But, why is that so much worse, Dad?"

"Because if there are many typhoid germs in the milk, it means that many more people who drink it will get typhoid, and the disease is apt to be much more severe, too!"

"And more would die, maybe?"

"Yes, Son."

"Well, Dad, can't something be done to kill these germs in milk, before we drink it?"

"Oh, yes. Milk can be pasteurized, and a lot of it is pasteurized nowadays, especially in the big cities; but in the country and small towns there's a good deal of it that isn't."

"What's pasteurization, Dad?"

"Heating milk enough to kill most of the germs."

"The typhoid germs?"

"Yes, and a good many others, too. You see, milk that's been pasteurized can't cause typhoid even if it had the typhoid germs in it from some one on the farm."

"I'm glad of that," said the boy, "but how do the typhoid germs get into the other things we eat? You said they did."

"Oh, mostly from carriers who are cooks or who work in kitchens, preparing food, washing dishes, waiting on the table or the like."

"But, Dad! I don't see how germs from these carriers can just jump into our food."

"They don't, Son. They get in only because such people are careless at times and get the germs on their fingers and then forget to wash their hands. That way they get the germs into the food they handle. A good many typhoid epidemics have been caused by that."

Sonny's head had begun to droop. "Daddy, I . . . I guess . . . I'm getting sleepy. Let's finish about the typhoid germs . . . some other time, will you?"

"We don't need to, Son; you've got about all there is to know, right now—except perhaps, how it's prevented nowadays."

"How, Daddy?"—with an effort.

"Oh, that's too long a story now, Son. Let's save it till another time. What say?"

"All right, Dad."

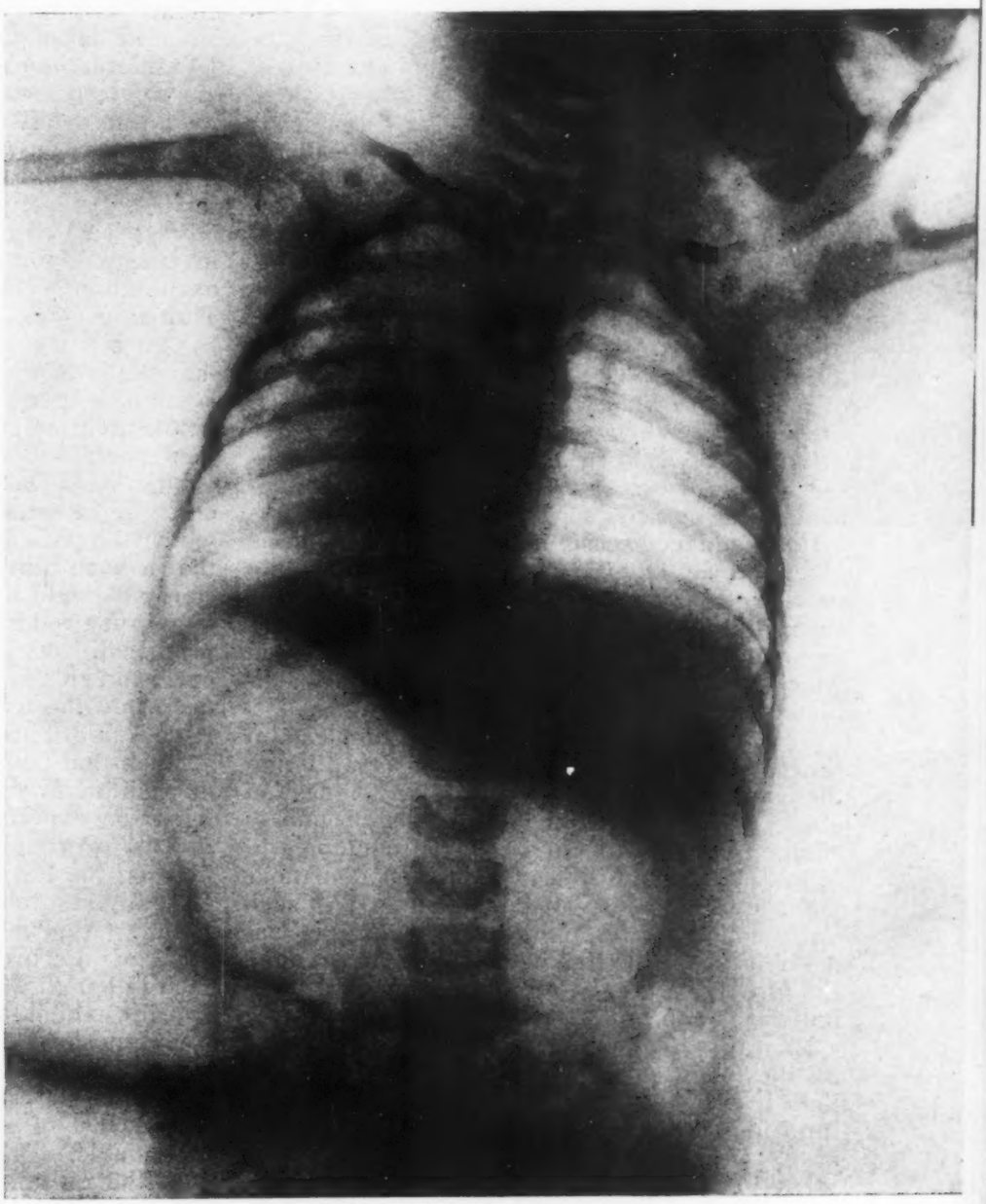
"Go on to bed, Son. You're half asleep already. We'll talk about it some other day!"

X-RAYS and RADIUM in MEDICINE

By H. W. VAN ALLEN

X-RAYS are a form of energy not unlike ordinary light. Radium is a whitish metal that gives off energy not unlike that of the x-rays. Each has individual uses, but in many cases their uses are interchangeable. They also have many applications outside of medicine; for example, the luminous dial of your watch contains an infinitesimally small portion of radium mixed with other substances, which it makes glow in the dark. Heavy fly wheels are inspected by x-rays to detect dangerous flaws, and eggs of certain forms of life are killed in cigars, for example, without opening the containers. That the public knows little of the actual workings of either of these forces in medicine is shown almost daily. For example, not long ago a young man said to me over the telephone, "My little baby has a red birthmark on its face, and my doctor says you can take it off by using *radio* or *radium*, I don't know which." It was no time to argue, so I said, "Bring the baby up. I have them both."

X-rays have two distinct applications in medicine, for they are used both in diagnosis and in treatment. As a diagnostic aid they enable the physician to look inside the patient to find out about broken bones or the presence of disease. X-rays cannot be seen by the unaided eye. This inability actually to see the ray is overcome in one of two ways, which are both important. A shadow picture may be taken. No camera is used. A photographic plate, wrapped so that ordinary light cannot affect it, is placed on a flat surface. The part of the body to be examined is placed on the covered plate. Let us suppose it is a hand with a ring on it. The x-ray globe, the source of the x-ray light, is placed about 2 feet above. The current of approximately 50,000 volts passes through the



THE HEAVIER THE SUBSTANCE, THE LESS THE X-RAY LIGHT GOES THROUGH IT. THUS THE X-RAYS' "MAGIC" REVEALS A SAFETY PIN SWALLOWED BY A YOUNG INFANT.

tube for a fraction of a second, and an impression is made on the plate. X-ray light has a definite rule: the heavier the substance, the less the x-ray light goes through it. Now let us return to the hand with the ring of which we were taking an x-ray picture. The plate is developed in the same way a camera plate is developed. As a result, there is a black background all around the hand where the hand did not protect the plate from the x-rays. There is a dark shadow of the flesh itself, but the bones can be clearly seen, as their heavier weight has produced a lighter shadow. The ring is outlined, nearly white, because almost no x-ray light was able to pass through it and darken the plate. With this example in mind it is easy to understand how the bones can be examined in any part of the body, how fractures, dislocations or disease can be detected and foreign bodies such as steel or glass be found.

Certain organs are no heavier than the surrounding parts. Without special measures, therefore, x-ray examination of such organs would be futile. The stomach, for example, is no heavier than the abdominal wall, and therefore, by the rule previously stated, it could not be seen. To overcome this difficulty the patient is given a tasteless, harmless, heavy powder in milk, which causes the entire organ to become clearly visible. This opaque substance can be watched throughout the entire length of the intestinal tract. In x-ray examination of the kidney a simple injection in the arm is given of a substance that passes quickly out through the kidney, showing clearly the outline and activity of the entire urinary tract and revealing certain diseases, including stones, which are sometimes missed in a flat plate.

Gallbladder disease is difficult to diagnose. Much aid can be given by the x-rays. A simple powder taken by mouth enters and outlines the gallbladder. This not only makes clearer any stone present but affords an opportunity to watch the filling and emptying of the gallbladder in a normal or an abnormal way.

Tumors of the spinal cord or brain can at times be found by injecting a heavy oil into the cavity in the spinal cord. At times an abscess breaks far from its place of origin. A simple, painless injection into the opening will follow the many times exceedingly tortuous passage to the cause of the trouble. With such an injection in the middle of the thigh it was possible to see the line of injection pass around the hip and pelvic bones and extend to a point halfway up the spine.

Most diseases of the lung are easily detected by the x-ray examination because the lung is light in weight, and nearly every disease of the lung increases the density at the point of disease. Occasionally, a harmless oil opaque to x-ray light may be used to reveal certain lung conditions. All these procedures are simple, easily done in the office and do not of necessity require hospitalization.

A second method of examination, known as fluoroscopy, consists of observation of the shadow made by x-rays rather than the actual taking of an x-ray picture. Instead of a photographic plate there is placed a screen which is sensitive to the x-ray light, and on this screen the shadows are seen. This method is highly useful in observing the motion of an internal organ, such as the swallowing apparatus. The food is seen as it passes down the throat, and the action of the stomach can then be watched. As the barium passes on through the intestine all parts are seen, and obstructions and adhesions are detected. It is possible to see the lung expand and contract and to observe the shape and motion of the heart. In many examinations, especially those mentioned, both the picture and the fluoroscoping methods should be used to make the examination complete. The fluoroscope notes any change in the action of an internal organ and gives its general outline; but details of any considerable amount are lacking, and only by the picture method can delicate lines be brought out for careful study. It should never be forgotten that early diagnosis of a disease is the most valuable asset in curing a pathologic condition. Have your examination early, and avoid a late recovery. That is a good axiom to learn and to follow.

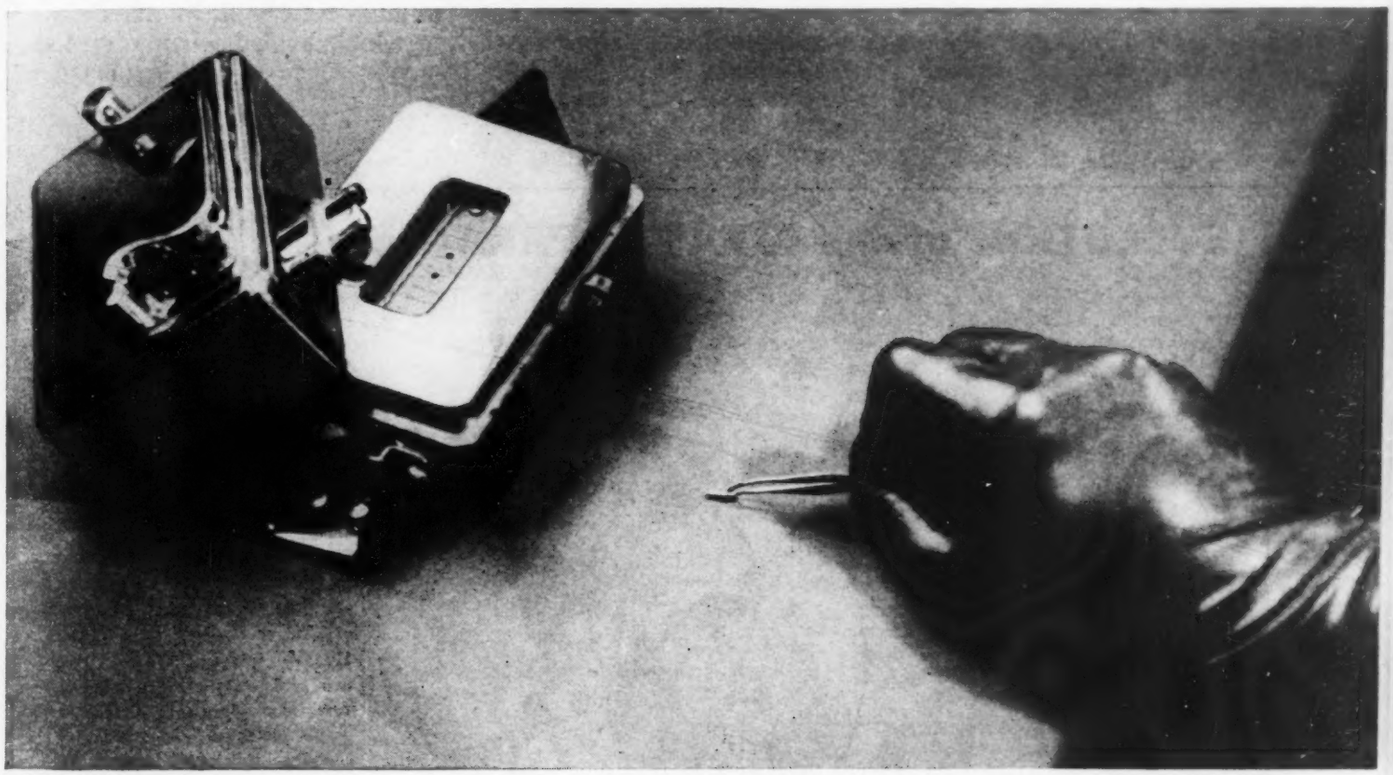
X-rays and radium have assumed an important place in the treatment of disease. There is absolutely no pain or even feeling in the application of either. X-rays can be neither seen nor felt. A so-called burn is not a part of the treatment; it occurs only through an error or in some extremely desperate case, in which the patient should be previously warned that a burn may be necessary; in this case his consent should be obtained. After some days a temporary reddening or tanning effect is often produced, which is desirable for hastening a cure; but this is not a burn. An x-ray burn is deep into the tissue and is a serious condition. It does not occur in proper practice.

Much that has been said of the expensiveness of radium is true. Without actually having tried the experiment, I believe a half million dollars' worth of the white powder could be held on the top of a dime. It is used in small closed glass tubes, enclosed in a silver container. A glass tube as large around as the lead of an ordinary pencil and one-fourth inch in length will hold $3,000 worth of radium. Does it exhaust itself in giving off this energy? Yes, but slowly. It is only half gone in 1,730 years! So there is no need to worry over that. It is this slow loss of energy that makes the actual cost of application to the patient very reasonable. The financial risk is in the danger that the radium may be misplaced or thrown

away by careless attendants or a patient. Those persons who have owned radium for some time have sustained a 50 per cent loss because of its recent reduction in price. This drop in price is due to increased ease of production, largely influenced by new mines in more accessible parts of the earth.

The ability of x-rays and radium to cure disease is dependent on the fact that some tissues in the body are more easily affected than others.

To understand the process better, suppose that you have an old moldy board in the cellar. Mold grows only in dark damp places. You bring the board out and place it on your lawn, so the sun shines on it. When you look at it the next day you find that the sun has killed the mold but not the surrounding grass. So it is with the diseased and healthy cells side by side. One is killed by a proper amount of x-rays or radium, and the other is not injured.



Keystone-Underwood

RADIUM IS TRANSPORTED IN SAFES AS IMPREGNABLE AS THIS IN ORDER TO PROTECT OBJECTS NEAR IT FROM THE RAYS. A BIT OF THE PRECIOUS MATERIAL IS ABOUT TO BE PICKED UP BY THE TWEEZERS.

X-rays and radium are destructive in effect. The body is made up of minute cells; even the abnormal tissues, such as tumors, are aggregations of cells. When a diseased cell can be easily affected by the use of x-rays or radium, enough of the energy from these remedies can be applied to destroy these unhealthy cells without harming the surrounding healthy ones which are to be retained. The healthy cells will not be much affected by the same quantity of rays that destroy unhealthy cells. The rays or energy will pass right through overlaying tissue almost as though it were not there.

If these facts are kept in mind, it simplifies the task of understanding the "how" of treating by x-rays and radium. Diseased cells can be picked out and killed without disturbing the other cells. In many cases this is an advantage over surgery, pastes or caustics, which remove certain good cells as well as the diseased ones.

Many malconditions are successfully treated by radium and x-rays. There is an unfortunate misconception that these measures are used only in the treatment of cancer; but in reality, cancer does not make up half the cases treated. The success of the application of x-rays or radium in many forms of cancer, however, is wonderful. A large proportion of cancers on the surface of the body are cured not to return as are also a fair proportion—considering the gravity of the disease—of those on the internal parts of the body. The earlier the case is treated, the more probable is the success of the treatment. If a person has a sore or discharge that does not entirely heal or cease in about six weeks, a doctor should be consulted, and treatment should be instituted at once. The following information was disseminated by the health department of the state of Massachusetts:

It is known that cancer of the following sites, when treated early, before metastases have occurred, will give the indicated percentage of five-year cures:

	Per Cent
Uterus	90
Breast	80
Mouth	80
Skin	95

From these serious diseases the usefulness of radium extends over a large number of less serious conditions, which include many skin diseases, such as birthmarks; eczemas; ringworm; psoriasis; acne, or pimples; warts; neuralgias, and so forth. X-rays and radium affect favorably the activity of certain glands or organs. Among these is the enlarged thymus, dangerous to young infants, and the thyroid gland, or goiter, in adults. A cessation of the ovarian function is easily produced, causing the menopause to be prompt and free from disagreeable sensations. The little known pituitary body in the brain is favorably influenced in its monitor-like action over the bodily functions.

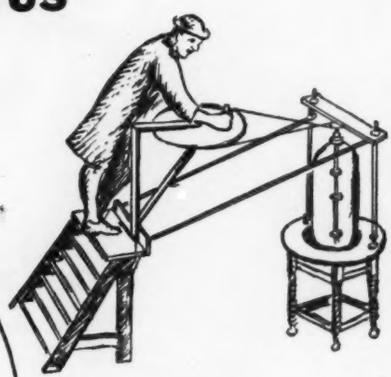
X-rays and radium are comparatively recent aids in medicine. New methods of application or changes in the rays are being constantly brought out which make possible still greater success in combating disease. These are two of the most valuable additions to the doctors' armamentarium which have been made in the last generation, and more is still expected of both.

EVOLUTION of the X-RAY APPARATUS

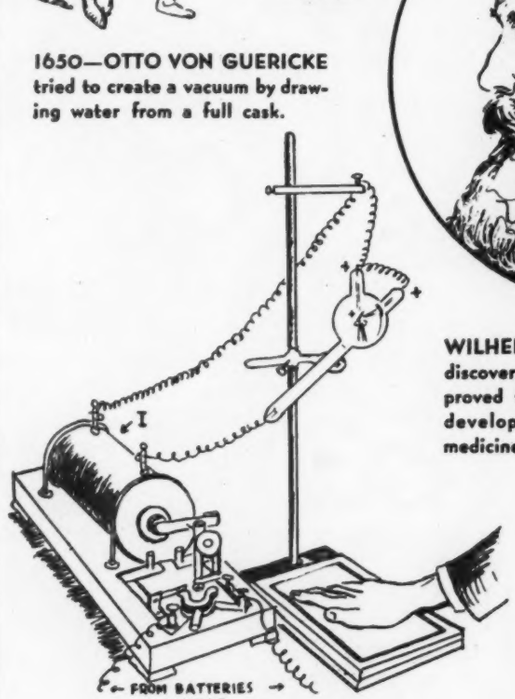
By ROBERT LEWIN

1650—OTTO VON GUERICKE tried to create a vacuum by drawing water from a full cask.

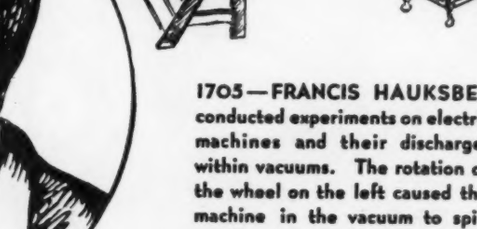
WILHELM KONRAD ROENTGEN discovered the x-rays in 1895. This proved to be one of the greatest developments in the history of medicine.



1705—FRANCIS HAUKSBEE conducted experiments on electric machines and their discharges within vacuums. The rotation of the wheel on the left caused the machine in the vacuum to spin rapidly and to produce a discharge.



Early type of x-ray apparatus in which the electricity is supplied by batteries. The current is changed from a low tension to a high tension by the induction coil (I).



When the current is applied to the terminals of the tube a stream of cathode rays is emitted from the cathode (C). These are thrown against the anode, a square flat piece of platinum, from which a powerful stream of x-rays passes through the glass of the Crookes vacuum tube (T), through the hand and then through the photographic plate.

LEBOIT

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

Getting Perspective in Health Education

FIRST OF A SERIES OF EDITORIALS ON BUILDING THE HEALTH CURRICULUM IN THE SCHOOL

THE TEACHERS of the Queenstown High School assembled in Room B at 3 o'clock in the afternoon on the fifth of September. It was the first meeting called by the new principal, Mr. Hamilton Richards. There were no absentees. They were all looking forward to this meeting, for Mr. Richards came to them highly recommended. He was said to be a young man of educational vision, common sense, initiative and courage. Special mention was made of his friendliness and power to enlist the hearty cooperation of his teachers.

Already they noticed something new. It was a large table in the room with a comfortable chair for each member of the faculty. At the center was an armchair for the principal. After disposal of some formal school business an active discussion was launched.

Let us listen in for a few minutes to this vigorous consideration of educational problems at the round table. The principal is speaking: "I hope you will find the chairs comfortable. It has long been a custom of mine to meet my fellow workers around a table. It symbolizes for me, as I hope it may for you, unity of purpose and a democratic spirit. At this table I hope we may talk about those problems which as teachers are vital to each of us. Perhaps we may find a major problem suitable for discussion throughout the year. Too often as teachers we are likely to go on doing what we have done for years without asking ourselves any questions about the nature and purpose of our work. A friend of mine has written this pamphlet entitled 'What are you doing? Why are you doing it? Why are you doing it like that?' I have found it very stimulating. I wonder whether anybody here has a question to propose for discussion today."

MISS RODGERS: Those questions are stimulating. It reminds me of one of my professors of education at the state university who found the whole trend of his professional life changed by the chance question of a visitor who asked "Why are you teaching algebra?" He was embarrassed and hesitated to make a reply. He did not want to say that he was teaching it to earn his living. He finally mumbled forth something about preparing boys and girls for college. After leaving his classroom he found the question of his visitor so insistent that he tried to work out a more satisfactory answer. This led him to read many books on the teaching of mathematics and the aim of education, and finally he became a professor of education. Perhaps we might start our discussion by asking ourselves "What are we all trying to do? What are our common objectives?"

MR. RICHARDS: An excellent idea. Perhaps you have some further suggestion?

MISS RODGERS: Here is a leaflet from the National Education Association entitled "The Seven Objectives of Education." It affirms in the first sentence that "Education is guided growth." It declares that the ideal of the public school is to guide human growth so every child may achieve for himself, regardless of race or condition, each of these purposes. The first of the seven is "A sound mind in a strong and healthy body." It seems to me that since health leads all the other objectives we might consider what we are doing to conserve and improve the health of our pupils. We offer a good deal of lip service in the name of health education, but I think most high schools and our school in particular would profit by the challenge of good health. It is something in which all teachers should be concerned.

MISS WOODWARD: I can understand why Miss Rodgers should think that health is worth while because she is a teacher of physical education. The promotion of health is her special job. This would be true also of school doctor, school nurse and teachers of domestic science and physiology. These special people are supposed to promote health, but I am a teacher of typewriting in the commercial department. What have I to do with health?

MR. SANFORD: It looks to me as if we all had a certain responsibility for a health program. Any teacher, whether she be teaching bookkeeping or chemistry, can do something to train pupils in some form of health observance, even if it is only how to regulate the temperature of their schoolroom and to study in the right kind of light.

MR. RICHARDS: Probably if you set out to do it you could mention many other things which every teacher in our high school could do for health.

MISS BATES: It seems quite probable that nearly all of us could find suggestions on healthy living in the subject matter of the courses we teach. Such an opportunity came up today in my class in European history. All my pupils, especially the boys, have been tre-

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To Contributors:—*The editor of the School and Health Department will be pleased to receive articles dealing with the actual solution of concrete and practical health education problems in the school. Contributions on general theory are not solicited. Articles must not exceed 1,000 words in length. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of* HYGEIA, *67 Clyde Street, Newtonville, Mass.*

mendously interested in Napoleon. Although they do not always approve of his acts, they do wonder at his unmistakable genius. Just what made him victorious? How was he able to deliver blow after blow against his enemies—a feat of physical endurance under which an ordinary man would have succumbed? Harry Patterson brought into class today a copy of Emil Ludwig's "Napoleon" and read this passage from it: "First of all he owes his success to youth and health. A body that can endure interminable riding without fatigue; the power to sleep at any moment, and to wake whenever he pleases; a stomach which can digest anything, and makes no complaint on being put on short commons; eyes that see and arrange everything."

Knowing something about Napoleon's health helped somewhat to solve the riddle of his greatness. We have decided to keep our eyes open in the future to see the part that health or the lack of it has played in the lives of other great historical characters.

MR. RICHARDS: I agree with everything that has been said.

MISS PHILIPS: As the visiting teacher I believe every teacher may do much to encourage healthful attitudes toward life. Often they may do much to help children to make the right adjustments. Boys and girls at adolescence have many serious personal problems to face. Teachers through their understanding of particular pupils may do much to help them meet life successfully. This is as important as, if not more important than, gaining skill in conjugating a Latin verb or in typing.

MISS WOODWARD: This meeting has given me some new ideas about the need for every member of the faculty to assume some responsibility for health education. I hope we may continue the discussion of this problem throughout the year.

MR. RICHARDS: If there are no objections we shall adopt this suggestion. We might well ask ourselves what provisions we have in our curriculum for the promotion of health. Are we taking advantage of our opportunities? The improvement of our health curriculum will challenge our ingenuity and power to think.

THE SCHOOL PHYSICIAN AND CLASSROOM TEACHER COOPERATE

BY ALLEN G. IRELAND, M.D., M.A., B.P.E.
Director of Health, Safety and Physical Education
STATE OF NEW JERSEY

The up-to-date school physician is also an educator. He is concerned not merely with the physical bodies of children but also with their school success and happiness. No supervisor of health has any keener appreciation of the opportunity and value of cooperation between the school physician and the classroom teacher than Dr. Ireland. In this, the first of three articles, he indicates how profitable this partnership may be.

SCENE: Any school or any place where teachers congregate.

TIME: Any school day of a past generation.

TEACHER A: That Tommy Tucker is exasperating. He's just too stupid!

TEACHER B: Only Tommy? *(surprise, with a hint of bitterness).* You're lucky. I have at least a dozen like him.

TEACHER C: And so do I. But that's nothing *(with a sigh of resignation).* If they're stupid, well, they're born that way, I guess, and there's nothing we can do about it. But when they're downright lazy, *(continuing on note of despair)* like that class of mine, why, they're—*(she pauses with a gesture expressing the futility of saying more).*

And, indeed, until recently there was nothing more to be said or done. Teaching methods were few and orthodox, and knowledge of children was extremely limited and usually unscientific. Though giving her best, then as now, a teacher soon reached the "end of her rope" and often her patience as well. As manifest in the foregoing incident, an impasse was always imminent, for it was inevitable that every teacher would have her share of dull and lazy and troublesome pupils. And, as Teacher C believed, they were said to be "born that way, and nothing could be done about it." No one was at fault, since it was simply a case of missing information. Knowledge of the matter stopped at that point.

Today, a conversation such as this is no longer typical. And soon it will be a rarity; not that children will be any less dull or lazy at times, though in the light of science much improvement is predicted, but they will be subjected to procedures of diagnosis and treatment as soon as the first signs appear. In short, correction will be established before undesirable habits become fixed. Evidence of this is prominent in any modern school system, where seeming miracles in the transformation of children are performed through the application of psychology in the teaching processes, psychiatric examinations, aptitude tests, individual guidance and scientific programming.

One phase of this new development holds special interest for readers of HYGEIA, since it originated in and was nurtured by medical science. It is a division of the school health program, that part involving the physician and in particular his relationship with the teacher. For purposes of introduction and comparison, let's "listen in" on the conversation of Teachers A, B and C of the present generation:

TEACHER A: Tommy Tucker is falling below his usual standard. I suspect his hearing, so I am referring him to Dr. W. (school physician) today.

TEACHER B: Good idea! I had a case last month, except that it proved to be eyestrain. She has glasses now, and the improvement in her work and morale is phenomenal. As a result, I am sending two others for examination.

TEACHER C: My most recent problem turned out to be undernourishment. Three boys and two girls. Daydreamers. Always seemed to be tired, inattentive, continually lolling over their desks. Dr. W. invited their mothers in for conference and also reported on them to the family physicians. He talked to the children with Miss D. (lunchroom manager) present; so now they have special menus at noon. But best of all was the help he gave me in developing a series of teaching units and projects on nutrition.

TEACHER A: Yes, teaching is a real joy since the health program was started. I used to hate it. Every

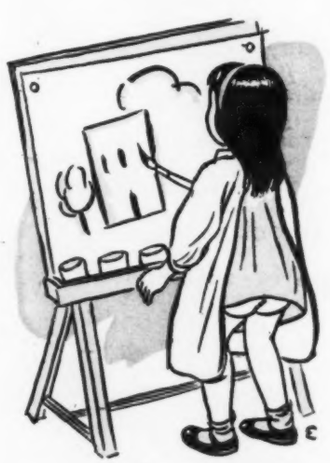
night I went home tired and grouchy. Now that the class is on its toes, so to speak, I can see accomplishment. And it makes me happy.

Several truths underlie this theme. In the first place, a child who can attend school is not necessarily a good pupil. Though apparently normal in outward appearance, his paths to learning may be dammed or at least partially blocked in one or more ways. Thus, his vision or hearing, for example, may not be functioning efficiently. Perhaps his whole body is below par, as it could be if undernourished, tuberculous, or toxic from decayed teeth or infected tonsils. Whatever the cause, the capacity for learning, for receiving an education, is usually reduced to some extent.

Teaching at its best is hard work. The strain on the teacher is terrific, much more than the layman realizes. But add to this children who are tired, emotionally unstable, inattentive, abnormally restless or incapable of full efficiency by reason of disorder, defect or disease, and something must give way. Either the teacher will break or ease herself into a rut, or the quality of public education will suffer.

From an economic point of view, is this good business? It appears not to be. To pay the maximum in dividends an investment must be protected. In this case the taxpayer is investing in society or, in other words, the state. He does so by insuring the preparation of its raw material; that is, the children in the schools. They are his security. To them he looks not only for the perpetuation of society but for its consistent elevation to ever higher standards of human living.

How, then, can this greatest of all investments be protected? Obviously, by insuring the freedom of children from handicaps to education; by keeping the nervous system of children open to learning,



and by safeguarding the health of both pupils and teachers. Hence, the school health program sprang up, to be followed by the school physician, together with his colleagues, the nurse, dentist, psychiatrist, social case worker, nutritionist and others.

On further consideration the advent of the school physician was inevitable. Not only does he contribute to the economy of schooling, but he guarantees in part that the ultimate purpose of education shall be fulfilled. What is that purpose? More and more it is being accepted as implied in the term "human living." No longer are we satisfied with exposure to algebra and geometry, history and civics, and English and French. We are thinking and speaking instead of citizenship, character, social adjustment, family relationships, leisure time recreations, sportsmanship and sound health. Indeed, health whether physical, mental, social or emotional, is essential to each of the other aims. It is the one inescapable factor in any educational program preparing individuals for a better life.

Since health is prominent as a basic factor in life, since it is essential in education and since it is constantly in danger by reason of ignorance, superstitions and temptations, it was therefore inevitable that society should look to its only organized congregation of children, the school, for a solution of the problem. Moreover, since health itself is a field of special problems, demanding special technics and knowledges, it was equally inevitable that health specialists should be added to the school personnel. There was ample precedent for this, particularly in the secondary schools, for in order to satisfy the requirements of an all-round preparation it was necessary to employ such specialists as teachers of art, music, dramatics, English, French, Latin, mathematics, science, chemistry, home economics, manual training and so on through a long list. In fact, the school faculty, ordinarily in our thoughts as teachers, constitutes a staff of specialists. To a large extent this is becoming increasingly true in elementary schools.

The school executive, whether superintendent or principal, becomes then the coordinator of a team. He holds the reins. With education as the major goal, it is his job to "drive" the team in such a manner that all the elements will fall logically and efficiently into their respective places. This is called integration, and it applies to the health specialists no differently than to teachers and supervisors.

The extent to which the special talents of physicians and teachers may be integrated will be developed in two articles to follow.

LAYING THE GROUNDWORK FOR A NUTRITION PROGRAM

ETHEL AUSTIN MARTIN
Director, Nutrition Service, National Dairy Council

What kind of nutrition program will you have for the year? Would you like the friendly suggestions of an expert in nutrition and health education? In the first of a series of special articles running through the year, Mrs. Martin tells you about laying the foundation of your nutrition program. In succeeding articles she will tell how such a program may be developed. Every classroom teacher, no matter in what grade she may be at work, will find them of value.

THE beginning of school in September is the logical time to lay the groundwork for a nutrition program, whether it be undertaken by the entire school or by one classroom teacher. With a proper foundation laid, the program can then be developed step by step throughout the school year. It is my plan to outline in the first articles of this series some of the general considerations basic to the success of any nutrition program and to follow these, month by month, with specific suggestions which classroom teachers may adapt to their own use.

The Classroom Teacher

The success or failure of the nutrition program depends on the individual teacher. And this is true largely because of the severe test of success which is applied to nutrition teaching; that is, its effect

on human behavior rather than mere acquisition of knowledge. When children have been influenced favorably in their living habits, the change may be traced almost invariably to the efforts of a teacher who has a combination of the following characteristics and abilities:

An understanding of the importance of nutrition to the general health and vigor of children.

A knowledge of the facts of nutrition and an appreciation of the need for adapting this information to suit the understanding of the children.

Ability to approach the subject in such a way as to catch the interest of the children.

A genuine, human interest in the welfare of children which will prompt her to utilize every possible means to protect or to improve the present nutrition of her pupils.

Classroom teachers may well check against such a list their own personal equipment for teaching nutrition. They need not qualify on all points at the outset but rather use them as goals toward which to strive. The lack of subject matter background is often their most serious handicap. It is one of the aims of this series of articles therefore to supply basic information which they will need and introduce to them a few good nutrition aids with each article. Classroom teachers should also learn to rely regularly on the school nutritionist or the home economics teacher to check the information which they use in their classes.

Nutrition in a broad sense includes all the bodily processes concerned with supplying the nutritive needs of the body, the food supply itself as well as all the steps in the digestion and absorption of food within the body. Teachers starting nutrition programs should first understand the term "nutrition" as it is interpreted in terms of the outward physical appearance of children. They should visualize what is meant by good nutrition as well as the varying degrees of poor nutrition. One satisfactory way of doing this is studying photographs of children who exemplify good and poor nutrition. Most important is it that they acquire a mental picture of a perfectly nourished child.

Health Appraisal of Each Child

An appraisal of the health of children in the classroom can be an important preliminary to a health program. Although usually construed to mean routine physical and dental examinations made by the school physician and dentist, the appraisal may well be more inclusive and more significant. For example, teachers may arrange to be present when the examinations of their pupils are made, to record the observations of the examiners, to discuss with them the defects which can be remedied and to follow up with notes, telephone calls and home visits to parents to urge correction of the defects indicated.

Carrying in their minds the characteristics of perfectly nourished children, corresponding to the ages of their own pupils, and armed with data from their physical and dental examinations, teachers will be fired with the most powerful of all motivating forces—an appreciation of the great need for starting a program at once.

It should be said parenthetically at this point that neither the appraisal methods just mentioned nor

(Continued on page 859)

TO AMERICA'S SCHOOLS

Your Health!

The American Medical Association and the National Broadcasting Company present a thirty minute dramatized radio program—during school hours—for use in schools but interesting to all listeners. See October HYGEIA for further announcement concerning time, topics and specific stations.

★ ★ ★ ★ ★ ★

QUESTIONS AND ANSWERS

Asthma

To the Editor:—Recently I heard of a new cure for asthma as follows: The patient is given two injections weekly consisting of eosinophils from an animal, mixed with nucleic acid. This treatment is said to reduce the eosinophilic count within a year and thereby to cure the asthma.

A. J. H., New York.

Answer.—No report of this type of treatment is found in a search of medical literature. The inquirer may not have stated correctly the method of treatment. There is no known method for separating eosinophils from other cells for such treatment. In addition, the presence or absence of eosinophils in asthma has nothing to do with the severity of the condition. Eosinophils may be normal in number in severe attacks of asthma.

This type of treatment, if it could be carried out in the manner indicated by the inquirer, would be classified under the heading of nonspecific foreign protein injections. Such treatment is generally not as successful as specific injections of the material to which an individual is sensitive, when this can be determined.

Corns and Warts on the Hand

To the Editor:—My daughter, aged 14, has a peculiar condition affecting the skin on the palm of her hands and inside of her fingers. There are many small hard growths which develop from tiny marks which look like blisters but are hard. The growths resemble corns but have no "core" characteristic of corns. These little corns are becoming progressively larger. One on the lower part of her palm is about the size of a lead-pencil eraser, and there is a thin white line on either side which looks like scar tissue. She has one wart on the outside of a finger. The other growths are painful to the touch and interfere with the wearing of gloves or mittens because of their sensitiveness. I have known people who had this sort of clear yellow corn on the soles of their feet and the bottom of their toes, but I have never seen it on fingers and palms. My daughter started with three about three months ago and now has more than a half dozen scattered all over her hands. No one else in the family has ever had this condition.

L. F. B., New York.

Answer.—The description of this skin condition suggests that the lesions are probably warts. Although they are commoner in other locations they sometimes occur on the palms and on the soles, in which areas they are more apt to be sensitive than on the backs of the hands and fingers. The presence of a typical wart on one finger would also indicate this diagnosis as these lesions are caused by a virus and are therefore infectious, which accounts for the continued development of new lesions. Because of the thickness of the horny layer of the skin of the palms, warts there may have the appearance of small pearly blisters. Certain unusual conditions such as a hereditary form of thickening of the horny layer of the palms must also be considered, but this usually affects the soles simultaneously and covers the greater part of these areas evenly. As an after-effect of arsenical medication small horny plugs may appear on the palms and soles, but in the absence of a history of such medication in the past this diagnosis need not be considered.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Dandruff and Falling Hair

To the Editor:—What is the present accepted theory as to the etiology of head dandruff and of falling hair in a healthy male adult of 22? Is there any scientific therapy for either of these conditions? Is there any logic in keeping hair clipped closely to prevent it from falling out?

N. S., Pennsylvania.

Answer.—The greasy type of dandruff (pityriasis steatoides) is of parasitic origin. This type is the cause of baldness in a large proportion of men. In a healthy male of 22, falling of the hair, aside from the normal physiologic type, is most often due to the greasy dandruff mentioned. Properly selected treatment will clear up the dandruff and stop the falling of the hair. Clipping of the hair is of no service in these conditions.

Indigestion Pains

To the Editor:—What is the difference between hunger pain and indigestion pain, besides the severity of the latter over the former? W. A. C., California.

Answer.—"Hunger pain" is an expression used by physiologists to indicate the feeling that comes from contractions of the stomach when it is empty. These feelings are not the kind of pain that is felt when the body is cut or crushed, but rather a vague sensation of distress or emptiness or sometimes a dull aching in the stomach region. These are associated with weakness, faintness and occasionally headache. They are never pronounced unless the person has fasted for longer than the usual interval between meals or when there has been excessive exercise.

The term "indigestion pain" is an indefinite phrase for almost any kind of abdominal distress which is believed to be due to indigestion. Often such pain really arises from other organs and is only erroneously referred to those of digestion. Diseases of the heart may thus precipitate what is often called "acute indigestion." If the phrase is used with some degree of scientific accuracy it should refer to those sensations, often truly painful in nature, which result from disturbances in the digestive processes, such as may be occasioned by abnormal secretions, muscle spasms, inflammations, obstructions and distentions, or chemical stimulations from the products of fermentation and putrefaction.

(Continued on page 850)

NEW BOOKS ON HEALTH (Continued from page 831)

SAFETY IN ATHLETICS

THE PREVENTION AND TREATMENT OF ATHLETIC INJURIES. By Frank S. Lloyd, Ph.D.; George G. Deaver, M.D., and Floyd R. Eastwood, Ph.D. Cloth. Pp. 432, with 47 illustrations. Philadelphia: W. B. Saunders Company, 1936.

THE BOOK is divided into three parts. Part I deals with the hazards in athletics and presents the relative hazard of the different athletic activities. The statistics are based on reviews of secondary schools and of colleges made by the authors. The review is organized by sports, the nature of injuries sustained in these activities, the part of the body injured and the causes of such accidents. This should be of value to all persons connected with the directing, training, coaching and teaching of athletics.

A chapter on "Safety in Camps" should be of interest to those directing camps. The material should be of value to doctors and nurses, as it presents a summary of injuries occurring in athletics.

Part II is concerned "with the program procedures for increased safety. It covers administration and program controls, equipment and leadership controls, and the direct controls for bringing about players' safety (training and conditioning, first aid, follow up, and safety consciousness). It should aid the administrator, teacher, coach or trainer, and any who may be directly or indirectly related to the establishment of procedures which are conducive to safe and effective athletics."

Part III is on the treatment of injuries and should be of interest to any person who is responsible for treating these injuries or for the administration of athletic control. The author brings out the fact that approximately 50 per cent of the accidents in athletics are unnecessary.

The hazards of the various sports are based on the ratio of the number and severity of accidents to the number participating in the sports. Thus football in high school, although it had the greatest number of accidents, ranked third, with touch football first, on the basis of the number of accidents per thousand players. Excusing of players by the physical director or dean gives a lower incidence of accidents than when the family or school doctor excused the players, but examination by an expert (doctor or coach) just before the game is the best prophylaxis against damage. More injuries occur in small schools than in large, in practice than in games, and early in the season or the game.

The treatment as taken up in this book is of more value to the trainers and first aid physicians than to the specialist. It should be a great help to the general run of doctors called on occasionally to treat athletic injuries, as these do not always realize the necessity of keeping the athlete in the game so far as it is safe to do so. Much of the advice about treating various injuries or parts of the body is very instructive. The voicing of the coaches' aversion to a plaster cast is interesting, but in the light of other observers it should not be given too much weight.

An extensive bibliography and a suggested outline for teachers of a course in safety in athletics add to the worth of the book. The authors deserve credit for a useful, painstaking piece of work.

MARCUS H. HOBART, M.D.

CHILDLESS

A STUDY OF STERILITY; ITS CAUSES AND TREATMENT. By Sam Gordon Berkow, M.D. Cloth. Price, $3. Pp. 307. Illustrated. New York: Lee Furman, Inc., 1937.

THE AUTHOR of this book has shown more skill in presenting his facts than judgment in selecting them. There is too much detail with respect to experimental or as yet poorly supported hypotheses in the field of endocrinology, altogether too much about vitamin E as a "fertility" vitamin, and throughout the book, too much material suitable for a medical book but not for a book intended for the layman.

When all is said and done, the sterile couple must still get their ultimate relief, if any, from the physician. They can be enlightened, it is true, by a well conceived book for the layman; but the state of knowledge with respect to the numerous factors possibly involved in sterility is not such at this time as to make for the successful writing of such a book. With the author's underlying thesis; namely, that our nation faces not the problem of excessive fertility but that of relative childlessness, every thinking observer will agree. Yet in an office like that of HYGEIA, among the thousands of letters asking for advice there are ten or more seeking for contraceptives to one desiring removal of obstacles to conception.

This book, written as it is in an attractive, easy to read style, might have served greatly to enlighten seekers after the truth about fertility, if it had not missed the mark by overshooting it, giving more material than the nonprofessional reader can assimilate and evaluate, and by failing to make sufficiently clear what is experimental and what is established. The bibliography is extensive and would be useful to medical readers but hardly to those lay readers for whom the book is ostensibly prepared. The index is adequate. The few illustrations are good.

W. W. BAUER, M.D.

THE HEALTHY LIFE SERIES

By John Guy Fowlkes, Ph.D., Lora Z. Jackson and Arnold S. Jackson, M.D. Cloth. Philadelphia: The John C. Winston Company, 1936.

HEALTHY BODIES. Grade 3. Price, 64 cents. Pp. 216.

HEALTHY GROWING. Grade 4. Price, 64 cents.

KEEPING WELL. Grade 5. Price, 80 cents. Pp. 264.

HEALTHY LIVING. Grade 6. Price, 84 cents. Pp. 288.

A MOTHER, a physician and an educator have joined forces to produce a series of health books worthy of the name. The books are easy to read, clear and concise. The pictures are exceptionally attractive and the drawings simple and illustrative of the point they attempt to make. The aim of this series is not to preach health but rather to point out by story, picture and illustration that to keep well, grow strong and have lots of fun in living is not only easy, but good sport. There is no suggestion at any time of fear used to teach. Instead of saying that too much candy is bad for one, the authors state "raisins, dates, figs and other dried fruit are as sweet as candy."

Of particular interest in volume I is the suggestion for the child to make a "health word" book. Some of the key words are starred, and the authors point out that these words are important in studying the book; then by devoting one page of the health word book to a word the child can find pictures that will illustrate the word, or he can write a sentence about the word on that page.

The third grader will enjoy reading this book and cannot help but profit. Special attention is given in other volumes to the teaching of safety and more detailed information on preventive medicine. The discussion on vitamins is well done yet simple enough for the grade student to understand. Schematic and simple line drawings add much to the usefulness of these books. The several paragraphs on alcohol and tobacco are well within simple statements on the evils of them. These books should not be limited to use in the school. They are excellent for parents who are interested in giving health information to their children and who do not depend entirely on the school to furnish it.

P. A. T.

(Continued on page 846)

GUARD HIM CAREFULLY, MOTHER!

ASK YOUR DOCTOR ABOUT HIS FIRST SOLID FOOD

Lest you be tempted to "experiment" . . . to start your baby on a first solid food solely of your own choosing . . . consider these facts:

A wrong first solid food can easily bring on loss of weight, lowered vitality and dangerous upsets.

A well nourished, properly gaining baby is better able to ward off many of the first year ailments.

If every mother in America realized the importance of proper feeding, a decline in infant mortality would certainly follow!

There is only one way to be sure at first solid food time. Consult your doctor and follow his advice.

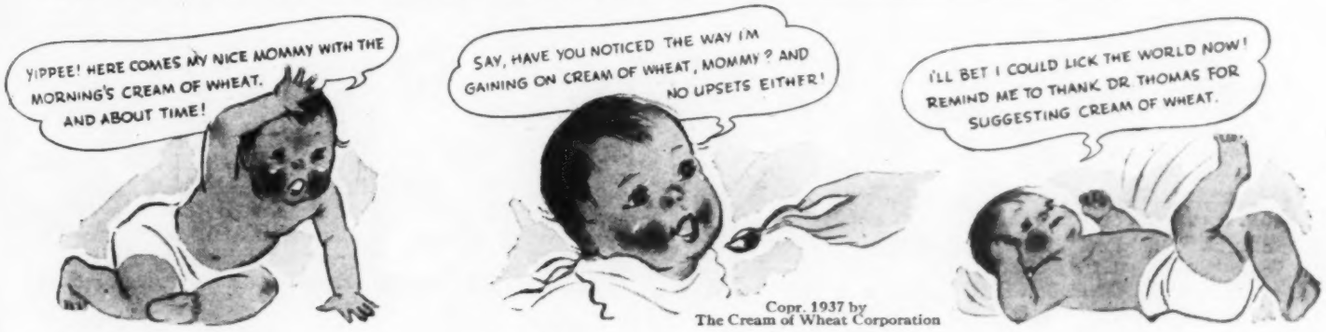
Perhaps he will suggest Cream of Wheat. And you needn't be surprised. Delicious Cream of Wheat has been used this way for 41 years, with remarkable results.

Cream of Wheat is clean and safe . . . packed under triple seal for purity. It is sterile when prepared for serving.

Cream of Wheat is digested rapidly and with little effort in the young system. It yields an abundance of food energy to help them grow, keep active, and gain weight naturally.

Ask your doctor about Cream of Wheat as the first solid food for your baby . . . and as an ideal breakfast cereal for all his childhood years.

- **Cream of Wheat is rich in a type of carbohydrate second only to sugar in the speed and completeness of its assimilation.**
- **Doesn't tax digestions. Even the most delicate young systems handle Cream of Wheat with perfect ease.**
- **Is a rich and economical source of food energy needed by every child.**
- **As part of an adequate diet it encourages steady, natural gains in weight.**


YIPPEE! HERE COMES MY NICE MOMMY WITH THE MORNING'S CREAM OF WHEAT. AND ABOUT TIME!
SAY, HAVE YOU NOTICED THE WAY I'M GAINING ON CREAM OF WHEAT, MOMMY? AND NO UPSETS EITHER!
I'LL BET I COULD LICK THE WORLD NOW! REMIND ME TO THANK DR. THOMAS FOR SUGGESTING CREAM OF WHEAT.

Copr. 1937 by
The Cream of Wheat Corporation

Care of the EYES begins in Babyhood

THE first step to protect your baby's eyes is taken immediately after birth —when the doctor or nurse drops a solution of silver nitrate into his eyes. This simple precaution has already reduced blindness from "babies' sore eyes" by 75 per cent.

Baby's eyes need constant care. Make sure that the sun never shines directly on them—not even when sleeping—for those delicate eyelids do not give sufficient protection. If the eyelids ever become swollen and red, and a discharge appears, call a doctor at once or take your baby to a hospital or clinic.

Cross-eyes always require early attention. Today, eye specialists are saving thousands of children from this permanent handicap. Even when the squint is barely noticeable, a tendency to cross-eyes can be diagnosed and preventive measures undertaken.

The most common defect in school children's eyes is farsightedness. To get a clear image of nearby objects, which seem blurred, the eye muscles are strained. Glasses relieve such strain and prevent the eyesight being seriously and progressively damaged. Even tiny children who are very farsighted or extremely nearsighted should wear glasses.

Childhood diseases occasionally leave the eyes in a weakened condition. You can be certain that your child's sight is normal only by having his eyes examined. If the verdict is favorable, you will be reassured. If there is a defect which needs correction, you will always be thankful it was discovered. The Metropolitan will gladly send you, free, a booklet "Care of the Eyes." Address Booklet Department 937-Z.

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, *Chairman of the Board* LEROY A. LINCOLN, *President*

ONE MADISON AVENUE, NEW YORK, N. Y.

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NEW BOOKS ON HEALTH

(Continued from page 844)

YOUTH STUDIES ALCOHOL

By Kenneth M. Harkness, M.A., and Lyman M. Fort, M.A., LL.D. Boston: Benjamin H. Sanborn & Co., 1936.

CHILDREN of today are facing problems different from those faced by their parents. Therefore it has become necessary to change the methods of teaching to meet the needs of today's child. An example of this change is noted in this booklet. Gone is the "chamber of horror exhibit" way of showing by chart and picture the effect of alcohol on live worms. In its stead the authors have sanely presented the problem of alcohol and its effects on the human body as well as its uses in industry.

This reviewer received the impression that the authors interviewed the youth himself and asked him what he wanted to know. Then the questions were answered without bias and without emphasis on the moral aspects of the problem.

The bibliography is excellent and consists of recognized authoritative books. The teacher and parent will find this volume a useful aid in giving information on this controversial subject. P. A. T.

KEEPING YOUR CHILD NORMAL

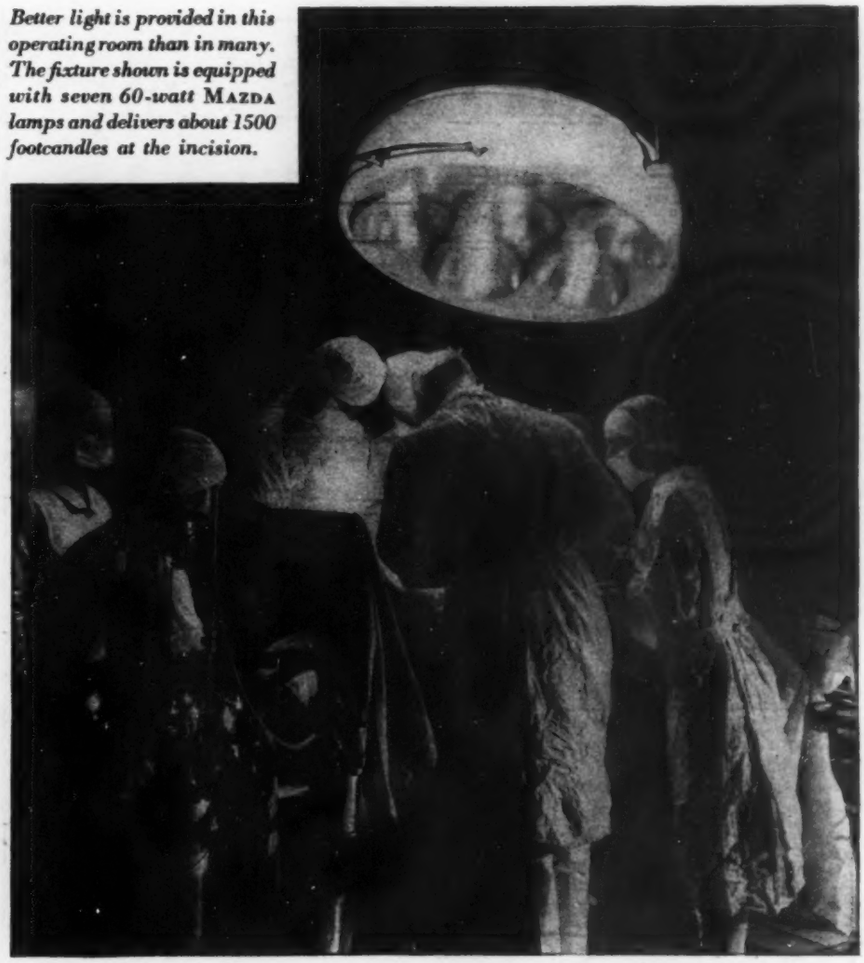
By Bernard Sachs, M.D. Cloth. Price, $1.50. Pp. 148. New York: Paul B. Hoeber, Inc., 1936.

THIS little book is designed for physicians, parents and teachers and is written by one of the outstanding members of the medical profession. Possibly because the majority of diseases were discovered previous to the turn of the century and because ailments are no longer named after their discoverers, Dr. Sachs is one of the handful of living Americans to have discovered a disease and to have it named for him. He is still a prominent and active neurologist. The discovery of the Tay-Sachs disease is not his only contribution to the knowledge of nervous and mental disorders. For two and perhaps more generations he has been distinctly one of the leaders in developing the science of child neurology, and he has shown a great capacity for understanding the child and his nervous and mental needs. As early as the end of the nineteenth century he had written a book on neurologic diseases in children.

While Dr. Sachs has never been a "fire-eater" he has aggressively stood for what he considered right, and one would naturally feel that, as the present little book indicates, the tremendous experience that he

has had would give him keen insight into the problems of bringing up children. "Keeping Your Child Normal" is a new edition of a book which Dr. Sachs published ten years ago under the slightly misleading title of "The Normal Child." It is not a large book, but every page is packed with information. No hobbies are ridden; no eccentric or peculiar ideas are developed about how to bring up children. What Dr. Sachs has done in the present volume is to shake down the vast amount of knowledge which has been disclosed in the past few years about how to bring up children and about the mind of the normal child, and to assemble it in a few succinct chapters. He gives the interested parent some ideas about the preschool child and the school child and about heredity, environment and delinquency. None of his ideas on these subjects is particularly radical; all of them are quite indicative of a mellow, level-headed point of view. In this day and age when so many child guidance experts have some particular theory which they work to the exclusion of all others and when even teachers and educators are prone to think that the more freedom a child is given the more "modern" and satisfactory the child's upbringing will be, the present book is almost a lighthouse of enlightened conservatism: It points out a safe and sane passage through the developmental years for the child. The information given on the various topics is not particularized; in fact most of the discussion is possibly overgeneralized, but there are references to specific studies which have been made by various experts in the field of child neurology.

The last third of the book is occupied with a long discussion of psychoanalysis, and this is somewhat uncalled for. Dr. Sachs has been known for his opposition to the idea of carrying freudian psychoanalysis to an extremity. While freudian mechanisms, such as the Oedipus complex, and other ideas which do affect the lives of the parents undoubtedly affect the child, Dr. Sachs points out that the freudian aspect is beginning to be too overemphasized in child guidance. From his own knowledge the reviewer knows of cases where freudian mechanisms have been disclosed and treated, and the child has recovered, but he would not be in sympathy with using this psychology to explain all the deviations of child conduct. Dr. Sachs brings forth a number of arguments against psychoanalysis, but unfortunately they are not all directed toward child psychoanalysis, so that there is much waste space and discussion



Better light is provided in this operating room than in many. The fixture shown is equipped with seven 60-watt MAZDA *lamps and delivers about 1500 footcandles at the incision.*

Critical Seeing

DEMANDS GOOD LIGHTING

IN OPERATING ROOMS . . . where lighting is generally better than in most other places in a hospital . . . the artificial lighting is often inadequate for critical seeing. Only by measuring it, is it possible to tell how much light there is.

Hospital operating tables require plenty of concentrated, shadow-free illumination for the critical seeing that surgery demands. At present the common practice in many hospitals is to provide between 300 and 400 footcandles, whereas ten times that amount is desirable . . . if artificial illumination is to approximate natural daylight.

Yet good light for critical seeing is relatively inexpensive. Your local lighting company will gladly send a trained lighting advisor to measure the light in your hospital free of charge. For detailed information on how to get better lighting in your operating room, write to General Electric Co., Dept. 165, Nela Park, Cleveland, O.

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What Air Conditioning May Mean to Your HEALTH

To the average person air conditioning means comfort primarily—the avoiding of undue heat and abnormal temperature.

However, to the scientist air conditioning is coming to mean much more than that. It is "air-sanitation"—treatment of disease, treatment of mental trouble—a whole new field of research on the health aspects of air conditioning.

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LOWELL S. SELLING, M.D.

A GUIDE TO THE TEACHING OF HEALTH IN THE ELEMENTARY SCHOOL

Prepared by Florence C. O'Neil. Pp. 101. Albany, N. Y.: University of the State of New York Press, 1936.

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It requires only a glance at this bulletin to realize that it presents a new world compared with that reflected in the formal course of study which it displaces. The old course of study was narrow and factual in scheduling information and habits to be taught. Its spirit was inclined toward dictatorship. This guide encourages and permits teachers to take the initiative in planning health teaching.

Unlike the old "courses of study," which were often "cooked up" by a few office people and smelled dreadfully of educational dogma and limited practice, it is founded on investigation. Work on this bulletin began in 1930 when a questionnaire was sent out to elementary school teachers in the state of New York. A thousand replies

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J. M. A.

TUBERCULOSIS EDUCATION

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THIS BOOK offers many vital suggestions to any community which wishes to take an intelligent and militant attitude toward its tuberculosis problems. It is an arsenal equipped with deadly weapons for a successful attack on this age-old disease. It presents a program which is clear cut and definite. The objectives of an educational program are well formulated. Every step in a cooperative tuberculosis program is planned. The book contains short articles on the nature, cause and prevention of disease for teachers and health workers which are models of concise scientific statement. The graphs are most illuminating. There are many suggestions on visual materials and methods. The bibliography is excellent.

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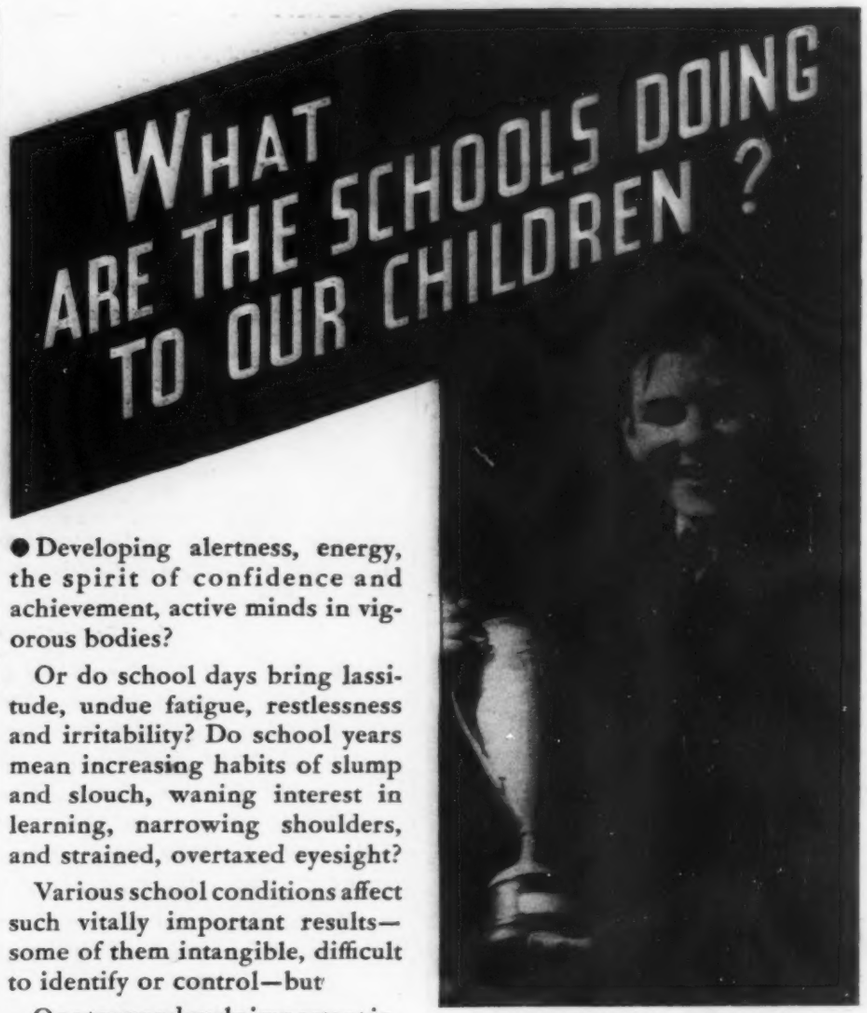

● Developing alertness, energy, the spirit of confidence and achievement, active minds in vigorous bodies?

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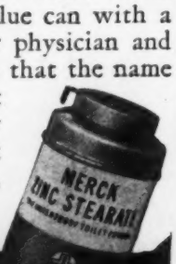

MERCK
ZINC STEARATE

QUESTIONS and ANSWERS

(Continued from page 843)

Tooth Powder

To the Editor:—I have been using as a tooth powder, which I mix myself, about equal parts of baking soda and sodium perborate and a smaller amount of table salt. Is there any reason why any of these products should not be used on the teeth, and are they proper cleansing agents? If this is considered a satisfactory tooth powder, what might I add as a flavoring agent to make it palatable for my small children?

R. B. S., Utah.

Answer.—The daily use of sodium perborate alone or in a dentifrice cannot be considered desirable for oral hygiene. The indiscriminate use of sodium perborate has been implicated as a cause of burns in the mouth following its use.

The following is taken from "The Home Medicine Cabinet," published by the Consumers' Project of the U. S. Department of Labor, and the formula therein may be considered to fulfil all the legitimate requirements of a dentifrice:

"A saving may be effected and the consumer may know what is in his dentifrice by making it at home. The following formula given in the National Formulary is suggested by the Council on Dental Therapeutics. Half of this formula makes over 16 ounces of tooth powder, enough to last the average family for several months.

Hard soap, in fine powder, grams	60
Precipitated calcium carbonate, grams	935
Soluble saccharin, grams	2
Oil of peppermint, cubic centimeters	4
Oil of cinnamon, cubic centimeters	2
Methylsalicylate, cubic centimeters	8

To make about 1000 grams

"The powder should be stirred while adding the flavoring oils, a little at a time, and then the whole put in a mason jar and shaken vigorously. Some drug stores may not be able to supply the powdered soap or precipitated calcium carbonate, but if consumer demand for these articles is large enough, druggists will soon begin to stock them.

"If the druggist is asked to do the mixing, the price is likely to be so increased that no saving is effected. An added advantage in mixing the ingredients at home is that the amount of flavoring materials can be regulated to suit the user's own taste.

"A convenient container for home-made tooth powder is an empty salt box with a metal spout. It can be filled through a small opening cut in the bottom of the container and the opening later closed by pasting over it a piece of paper."

Public Health Pamphlets

o

COMMUNICABLE DISEASES

These pamphlets are prepared for persons, especially parents who are interested, for boards of health and for local, state or national organizations desiring to secure authoritative articles for distribution. Each pamphlet describes the salient features of the disease which is discussed, giving authoritative information as to its cause, if known, signs and symptoms, methods of transmission and advice about isolation, quarantine, etc.

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—Pasteur's Conquest of Rabies 50 Years Ago	5c
—The Safest Place in Town	5c
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—Protecting the Child from Tuberculosis	5c
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TODAY'S CHILDREN

Today's children have the right to be "well-bred, well-fed, well-led and well-wed," according to Dr. Harvey F. Garrison, president of the Mississippi State Medical Association, in his address before the recent convention of that society.

"These four 'wells' have depths and diameters beyond computation," he declared. "The relations of breeding, feeding, leading and marrying to parentage are much simpler than many writers would have us believe. They are the original, divinely given obligations and duties, and are reasonably performable when rightly thought about and made into parental objectives. They may not confer complete happiness, but we commend them to widespread consideration.

"We should all be more concerned about the health of the children. Health is the essential element in living a successful and, therefore, a happy life. All possible care, all provision necessary, all effort, are due the children in this matter of health."

The proper development of the child is one of the greatest of the privileges and obligations of man, Dr. Garrison believes. However, "the increase of juvenile crime, with its attending tragedies and high costs, indicates that fundamentally something is radically wrong in our methods. We are expert in many things; we are bunglers when it comes to that which is the most vital—the proper training of youth.

"The child should be encouraged to develop his own original line of thought and action as much as possible. The instincts are the starting point of the mind, and the roots of those instincts lie deep in the subconscious mind and are part of the ancestral inheritance; they are the foundation on which the future is built. It is, therefore, necessary for parents to understand the right guidance of the instincts in order to develop fine men and women."

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It is now possible to telegraph fancy baskets of fruit from one city to another as has been done for so long and so successfully in the case of flowers. Fruit Telegraphic Delivery Service, Inc., is now in active operation with national headquarters at 2337 Boardwalk, Atlantic City, N. J. Membership is comprised of fruit dealers in the principal cities of every state in the union who handle and deliver long distance orders for fruit.

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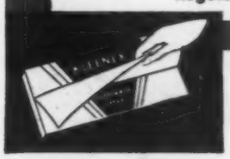

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ANSWERS TO QUESTIONS ON PAGE 777

Here are the correct answers to the questions on page 777. In each is shown the percentage of seventh grade white children who gave the correct answer. How do you compare?

1. *False* (24 per cent). Halitosis may be due to conditions in one of many organs which a mouthwash cannot even reach or to conditions in the mouth which a mouthwash cannot help.

2. *False* (18 per cent). Boils are infections of the skin due to organisms entering from the outside. Only in certain severe diseases like diabetes may the condition of the blood favor boils, but it does not cause them.

3. *True* (77 per cent).

4. *False* (70 per cent). Fever sores or cold sores are evidences of an infection which does temporary injury to local nerves; the infection, if it is a cold, may be transmitted by kissing.

5. *True* (81 per cent).

6. *False* (65 per cent). Alcoholic drinks have not been shown to have any greater value in the treatment of colds than similar drinks without alcohol.

7. *True* (54 per cent).

8. *False* (54 per cent). Freckles are so deep in the skin that they cannot be removed by anything short of severe skin peeling, if then. Some freckles disappear without any application.

9. *False* (56 per cent). Constipation may be due to one of many causes, some of them serious, for which no mere article of diet like yeast is of any service. Yeast may do harm to some persons.

10. *True* (53 per cent).

SEX EDUCATION

Booklets by THURMAN B. RICE, M.D.

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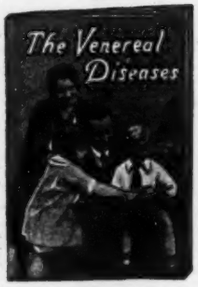

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SPEEDING UP YOUR READING

(Continued from page 814)

on a film record, dividing by the number of words in the test and multiplying by 100, will give the number of fixations per hundred words. An inexperienced reader will obviously have more such fixations than a skilled one. Therefore the number should decrease as the age of the patient increases. A second year school child shows on the average about 150 fixations per hundred words. A fifth grade pupil stands at about 100, that is, one fixation for each word read; and a seventh grader about 95. In high school this should decrease to 93 and by the time of college should be as low as 80. This means that there is a halt for every 1¼ words. In some cases the span can be increased.

But do a little more calculating —this time on the regressions. If you count the number of times the eyes move backward instead of forward, retracing a step in order to pick up the meaning of something lost, you will have another significant figure. The computation is easy and simply consists of dividing the total number of regressions by the number of words in the test and multiplying by 100, thus giving the number of regressions per hundred words. Again we expect these backward movements, so common with children who learn with difficulty that all reading is forward, to decrease as skill in reading is acquired. It is not surprising, therefore, to find that a second year school child shows forty-five regressions per hundred words, approximately one for every other word. A fifth grade youngster shows only twenty-two, a seventh grader nineteen, a high school student seventeen and a college student ten. The figure is, in part, related to the difficulty of the material. I have discovered intelligent college students who show an even lower figure. You can obtain some idea of the number of regressions per unit of text by having a friend watch closely the movements of your eyes, counting the backward shifts as you read. He will not be able to catch all the regressive movements; they are too small and too fast, but he may be able to see some of them. Then you may watch his eyes for the same symptoms. It is not unusual to find students in college still struggling along with the same habits of reading they had in the seventh grade or in high school. It is easy to see how any slovenly or uncoordinated habits of reading are

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a serious handicap to such a student.

Sometimes it is interesting to compute the duration of any single fixation when this is unnecessarily long. I have seen a reader stop on some points four times as long as on others—usually where the word itself by its unfamiliarity offered difficulty of comprehension. The average fixation time is also a figure of some interest in many cases and becomes in rough measure an estimate of the difficulty of the passage for the patient.

Now all these facts taken together, with an ability to recognize refractive and muscular disorders, mean a much more thorough diagnosis of reading habits than has hitherto been possible. The following typical records will show how great are the variations between patients.

Here is a record that looks like a regular set of stairs descending from left to right across the film. It shows about four or five steps to each line of print before making its return sweep to the beginning of the next line. It manifests few regressions and is relatively short in length. Occasionally there are longer fixations on more difficult words, but in general it is excellent. It is the record of a college boy doing splendid work in all his courses. The rate is 444 words a minute. While this is not the maximum for college students, there are not many who exceed it. Each movement of each eye is well coordinated with the corresponding movement of the other eye. Few have such flowing ease of comprehension as this boy.

But here is a second record. It looks like an indecisive pair of lines descending the stairs in a drunken manner. The fixations are irregular in length; the regressions are numerous, and the length of the record is excessive. It happens to be the record of a fifth grade boy with a reading speed of 20 words a minute: the average for his age is 185; 300 fixations, which is three times too many, and 125 regressions per hundred words, and the rate should be 22! Several times the pupil has failed in school. Since, however, he has little trouble retaining material that he has heard orally discussed, the trouble does not seem to lie with his intelligence. Naturally he hates long reading assignments. The American Optical Company estimates that 60 per cent of all failures in school are due to such conditions. That is probably high. But such a boy will continue to be a school problem, perhaps even a disciplinary problem unless, through training, his rate can be increased and his lack of coordination corrected.

Although these two pictures in no way complete the list of typical cases, they will serve to show how great is the variation encountered.

What can be done about such cases as this? How can they be helped?

Reading is a muscular habit, and like all habits of exact, rapid coordination, it can be developed or retrained by patient effort.

The essential principle of the instruments by which retraining is accomplished is simple. The apparatus looks like a small oblong box with a long lattice window in it. Shutters over this window are so arranged that they provide a means of exposing a line of print in three successive portions rhythmically. Speed of exposure of these portions is regulated to suit the needs of the subject and is usually set slightly faster than his usual reading rate. Since there is no chance to go back over a part of the line once it has disappeared behind the shutter, the eyes cannot make regressions and are thus helped to make their fixations in a rapid, forward-moving manner.

Training with such a short-exposure, or tachistoscopic, apparatus tends to increase not only the rhythm of the reading but also the span of recognition. Thus although the span of the average college student is but one and one-fifth words, training can build this up to two words in many cases, with a large increase in efficiency. And since the textual material is in constant progression, interest is encouraged, habits of concentration are established and, in time, comprehension is increased. The material to be presented is, of course, properly adjusted to the age and experience of the subject. Children in the first and second grades are shown pictures and number rolls of which they name the elements orally. Adults are given material of a narrative or historical character. Comprehension is checked by asking the subject about the content after the reading session is finished.

It is, of course, clear that remedial work at its best consists of adapting the instruction to the individual pupil. Not all students need the same thing, nor is this instrument the only means of retraining. For some, rhythmic, visual presentation of material helps; for others, study of the letter formation of words, phonetics, syllabification and written and oral composition are equally of value.

Whereas formerly reading habits could not be tested objectively and hence had to be neglected, they can now be diagnosed and retrained successfully. Photographic records of the actual behavior of

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Peyote, a small narcotic cactus used by many American Indian tribes as a religious sacrament, is interestingly described in Nature Magazine for September in an article by Frank Evans Shulte entitled "Peyote and the American Indian."

To the Indian, it is the greatest of all medicines. Intoxication from the plant is singular in that consciousness is never lost, control of the limbs is maintained and rarely are there uncomfortable after effects. The plant is not habitually used, but all-night ceremonies dedicated to Peyote worship are common among some tribes. This interesting ceremony, the kaleidoscopic colors seen while under the influence of Peyote, and other facts about this drug are described in Mr. Shulte's article.

Other interesting features in the September issue include: "The Terrible Termite" by Hugh Spencer, "Our Unstable Shores" by Elliott Roberts and "Our Noblest Deer" by Vernon Bailey.

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the eyes aid in the diagnosis, and special training can increase the speed of comprehension and the flowing rhythm of eye movement. A distinct forward step has been taken in this field, the benefits of which will be counted not only in terms of pleasure and comfort to the individual but in terms of his social and economic success. Everywhere in schools, offices and factories a need for more efficient visual habits exists. These modern methods will soon become prevalent as a means to working with vision as the most important factor in learning.

FACTS CONCERNING SELF MEDICATION

The primary folly of self medication lies in the inability of the ordinary individual to diagnose his own ailments, and the first essential of any competent treatment is an accurate diagnosis. It has been said that "He who treats himself has a fool for a doctor." Certainly he who treats himself usually treats symptoms rather than the underlying disease, and it is to this characteristic that the manufacturers of "patent medicine" and nostrums appeal. These symptoms may be the early warning of conditions which will become serious if not recognized and properly treated.

No one is to be depended on for the diagnosis of diseases except a physician, and at times it is not without great difficulty that he is able to arrive at the correct diagnosis. No physician will prescribe for a patient without some knowledge of what disease or condition he is treating. Certain drugs have specific actions on body tissues; therefore the physician first determines the disease to be treated, and then he is able to prescribe such drugs as may produce the desired results; otherwise, if drugs are administered, they may produce undesired or even dangerous results.

A close observation of advertising propaganda will reveal that the various remedies flaunted before us from all available mediums are usually not advertised as cures for diseases but as relief from certain symptoms. However, the ads are frequently so cleverly worded that the suggestion is received that they are cures.

Most of us may not be expected to look for the things omitted in medicine advertising, but for the safety of ourselves and our families, we can refrain from self medication and go to a physician with our ills. He is the only one competent to diagnose and treat them.—*The Health Bulletin of North Carolina.*

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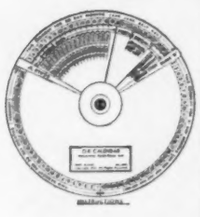

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ADOLESCENTS' ACNE

That unfortunate form of acne, known medically as acne vulgaris, and occurring so frequently in juveniles and adolescents, constitutes a most important and difficult problem. Since it causes no physical disability, some have been inclined to look on it as merely a disturbance of the skin which passes away as soon as the individual is fully developed into an adult. Such is not the case in many instances.

Much evidence at present places the blame for acne vulgaris during this age group, at least, on some defect in the endocrine system. A hormone or combination of hormones, probably the same that stimulates the growth of axillary and pubic hair, causes a piling up of cells around the exits of sebaceous glands with blockage of the ducts or the openings and formation of comedones, or blackheads.

The process may stop right here or go on to a second stage, where apparently under the same stimulus these oily or sebaceous glands increase their secretions. The opening being stopped up, swelling occurs, infection by bacteria already present sets in, and a typical "pimple" is the result. Often infection does not occur; in that case no "head" will appear, but a red, raised, painful and unsightly mound of varying size will gradually appear and just as gradually subside—a slow, stubborn process.

The finest local treatment is strict cleanliness, which may be maintained with a mild soap and plain water. Not only are creams worthless and expensive, but some may even be harmful, because it is an oily skin we are trying to avoid. Suitable astringent or "drying" lotions are helpful, for they tend to decrease secretions of sebaceous glands, promote unblocking of the ducts and allow drainage.

Blackheads should not be squeezed but removed with a special device designed for that purpose and obtainable at some barber shops and drug stores. Ultraviolet lamp treatments and vaccine injections have not been successfully employed in most cases. X-ray treatment for the external acne sores has been used beneficially, but this does nothing to correct the fundamental cause of the condition, only improving the person's appearance. Scientists are experimenting with hormone preparations and have reported moderate success.—*The Health Bulletin of North Carolina.*

Give me health and a day and I will make the pomp of emperors ridiculous.—*Emerson.*

ACCEPTED FOODS

This department is a useful guide in the selection of foods of quality, advertised with truthful claims. All products in this section as well as any others advertised elsewhere in HYGEIA stand accepted by the Council on Foods of the American Medical Association, and are entitled to bear its "Seal of Acceptance." The foods listed here are but a portion of those accepted by the Council. If you desire information regarding any other food product, you are invited to write to HYGEIA.

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See Page 858 For Details

Do You Know—

1. What the nature and uses of fluoroscopy are? *See page 835.*
2. Where the sinuses and turbinates are, and what happens when they become infected? *See page 794.*
3. What are meant by saccadic and conjugate eye movements? *See page 811.*
4. What to do when your baby won't eat a certain article of food you deem necessary for his well being? *See page 805.*
5. How to find health on your doorstep? *See page 784.*
6. What kinds of arthritis there are, and wherein they differ? *See page 786.*
7. What three things to consider in helping the child choose a course in school in preparation for his career? *See page 818.*
8. What seven points should be observed in sending your child off to school for the first time? *See page 781.*
9. How to effect a wise and consistent reduction in a child's weight? *See page 801.*
10. Who discovered the typhoid bacillus, and what general appearance it has under the microscope? *See page 832.*
11. For what, principally, is Thomas Sydenham known? *See page 829.*
12. Whether certain articles of diet have any relation to the development of cancer? *See page 792.*
13. Who discovered gelatin, and for what purpose was it originally used? *See page 816.*
14. What part the parents play in training a child who develops the tendency toward lying? *See page 788.*
15. What peculiarities are noted in the physical development or growth of a youth of adolescent age? *See page 778.*

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How to Pick APPLES

Apples travel on their looks. Some persons prefer red apples, some yellow. Whichever kind he grows, the orchardist selects the most attractive apples to pack in boxes or barrels for market. He knows that the finest looking apples, other factors being satisfactory, will rate the best U. S. grades and bring the best prices. And he also knows that well colored apples are not nearly so subject to injury by storage scald as are apples in which color is imperfectly developed.

Buyers have a decided preference for well colored apples, because good color is a practical and easy way to tell that the fruit is ripe. Of course the customer must first decide what kind of apples she wants—for cooking, eating or general purpose—and then see what the local market offers in the varieties for each of those purposes. Within the chosen variety the appearance of the fruit usually governs her decision, whether she buys single apples or a whole barrel.

Chemists have recently been interested in the chemical changes in apples that bring out good color. They have found out that these changes are also required to bring the fruit to maturity and to develop flavor, aroma and good eating quality. In order to be good, red varieties should be red, and yellow varieties yellow, showing that they possess the special chemical constituents that give color to the skin and assure good flavor.

It is interesting to note that the methods used in washing the apples before they went into storage made a difference in how they behaved when taken out of storage—whether or not they shriveled or lost their flavor. The ripening following picking is determined almost entirely by the temperature at which the fruit is held, either commercially or under home storage. This rate of ripening differs for different varieties of apples and for the same varieties in different parts of the country. Most commercial varieties will keep at from 32 to 40 F.

Of the thirty-five to forty best known kinds, some ten or fifteen account for about 85 per cent of the average crop. The Bureau of Plant Industry mentions among the well liked general purpose varieties: Wealthy, an early apple in the East but gathered in the fall in Michigan and the upper Mississippi region; Jonathan, common to all the middle latitude states (Ohio, Indiana, Illinois, Missouri, Kansas, Iowa, Nebraska and northwestern Arkansas) as well as in the northwest; Northern Spy, another northern and eastern favorite; Stayman Winesap, Baldwin and McIntosh.

Chiefly for dessert or eating uncooked, those who know apples recommend Delicious, Spitzenburg, Grimes Golden, Yellow Newton and those in the all-purpose group. Generally speaking, the York Imperial, Baldwin, Rome Beauty and both the Winesaps can be depended on for most cooked uses. The best varieties for large yields of jelly in the New York area are Rhode Island Greenings, Esopus Spitzenburg, Tompkins King, Northern Spy and Fall Pippin. Oregon recommends Maiden Blush, Scott, Twenty Ounce Jonathan, Rome Beauty, Northern Spy and others.

To be at their best, apples are cooked with as little water as possible and not too long; they are seasoned sparingly with spices like cinnamon or nutmeg, so as not to cover up the delicate flavor of the apple itself. And the good cook adds a few grains of salt to bring out all the sweetness stored within the fruit itself.

SCHOOL AND HEALTH

(Continued from page 842)

others which have been widely used, such as weight in relation to height at a given age, can be considered true measures of nutritional status. Each may contribute something to the general health picture, but none is wholly reliable for assessing nutritional status, considered in its broad sense. Nevertheless in the school routine it is rather generally agreed that children should be weighed monthly and that other objective measures and rating scales may be applied profitably. These are advocated however not with the idea of determining nutritional status but of using them as teaching devices or as bases against which to measure physical improvement as the nutrition program progresses.

An Introductory Teaching Unit

"How can I introduce a nutrition program?" "What can I do to interest children in better food habits?" These are the first questions which trouble teachers once they have decided to start nutrition programs. This problem is often solved by the use of an introductory unit, conducted throughout the first weeks of school when the various appraisal measures are being applied to the children. The main purpose of the unit is to create in children a wholesome interest in growth and health and thus to develop in them a receptive, cooperative attitude toward the program which is to follow. Just how this can be done is best considered at the various grade levels.

The introductory unit in the lower grades should interest children in growing, so that they will eagerly acquire habits necessary to promote good growth. Much of the teaching may center around the first weighing lesson. Interest may be directed to growing animals and plants and finally to growing children. Individual weight graphs may be started. Children at this age can understand that gaining weight is one important way of showing that a boy or girl is growing.

A favorable attitude toward the doctor and the dentist can be built up by discussing their friendly interest in the well being of children.

The teacher's own interest and enthusiasm are the main motivating forces in the lower grades. These may be stimulated and kept alive by tangible devices, such as the monthly weighing, keeping weight charts and a simple daily class inspection. The latter is conducted

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The largest use for gelatin (either plain or flavored) is desserts and salads. Unflavored gelatin is an essential ingredient in ice cream. Used as a stabilizer it prevents the formation of ice crystals and insures smooth texture. Large quantities are used in marshmallow confections, cookie toppings and cold meat items.

Gelatin is one of the emulsifying agents used in the preparation of pharmaceutical emulsions. See Volume XI, Page 143 of the U. S. Pharmacopoeia.

The medical profession generally recognizes the wholesomeness and value of gelatin. It is recommended by physicians and dietitians for infant feeding and is widely used in hospitals—certain evidence of its purity.

Gelatin is 91% protein—no other common food is so rich in protein value.

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Personally I prefer it!

● This young chap doesn't realize, perhaps, how pure White House Evaporated Milk is—how rich, how safe and easily digested. He only knows that it pleases his taste when it turns up in his creamed vegetables, soups and desserts. White House is accepted by the Council on Foods of the American Medical Association.

A&P FOOD STORES

SOLD BY A&P STORES EVERYWHERE

Try Heinz Double-Sure Strained Foods for Baby

You know Heinz quality in foods. You can have this same high standard in strained foods for baby. Insist on Heinz. Send for valuable baby diet book featured on page 862.

H. J. HEINZ CO., Pittsburgh, Pa.

WHEATIES

● Make youngsters eat big breakfasts—start them off with a heaping bowl of Wheaties, the new whole wheat cereal. Nutritious and delicious. At your grocer. See 3rd Cover.

What's in a Can of Canned Food?

Modern knowledge is shattering many false ideas about canned foods. Be sure to read the highly informative series of ads in HYGEIA on values of canned foods. See Second Cover.

AMERICAN CAN COMPANY, New York City

PLEASE SEE PAGE 769

HEALTH PLAYS from HYGEIA

Six plays which previously appeared in HYGEIA are available in reprint pamphlet form.

The School Lunch Room.—11 to 20 characters. Set of 10 copies, 45 cents. Single copies, 10 cents each.

The Medicine Men—A Puppet Play.—7 characters. Set of 7 copies, 30 cents. Single copies, 5 cents each.

The Friendly Brushes.—11 characters. Set of 11 copies, 50 cents. Single copies, 10 cents each.

"Sissy."—4 characters. Set of 4 copies, 25 cents. Single copy, 10 cents.

The Magic Fluid (Diphtheria Antitoxin).—8 characters, with chorus, "king's subjects," etc. Set of 8 copies, 35 cents. Single copies, 10 cents each.

The Gift a King Accepts.—15 characters. Set of 15 copies, $1.10. Single copies, 10 cents each.

Send for catalog with further description of health plays.

HYGEIA

535 North Dearborn Street CHICAGO

daily by the children. They appraise the appearance of members of the class with respect to such items as clean hands and combed hair, all factors over which children have control and can be held responsible.

In the more advanced grades the introductory unit can contain more formal subject matter. It logically includes suitable consideration of those body parts considered in the various aspects of the physical appraisal, such as nose, throat, eyes, ears and so forth. Thus not only will children take a greater interest in the examination, but the examination itself serves to interest them in the study of their own bodies. Children at this age are concerned with increasing their strength, in building greater endurance and in growing up. They will enjoy collecting pictures of animals and people exemplifying good nutrition. They can take responsibility for animal feeding demonstrations in the classroom on which better growth is obtained with an adequate diet than with a poor diet. They can make the application to their own nutritional well being. Regular weighing, weight graphs and daily inspection continue to be effective devices for these grades.

High school students need a more compelling incentive than do the younger groups to arouse them to the need for good nutrition. Once impressed with the need, however, they are consistent in holding to health schedules. An example of this determination is the aspiring athlete who makes personal sacrifice of coveted foods or good times in an effort to make the team. Such objectives are immediate and real: athletic heroes in their own school, a local celebrity or a screen star. Strength and endurance appeal to boys, poise and beauty to girls.

An effective way of introducing nutrition teaching in the high school is through a frank discussion of these heroes. What are their characteristics, how do they live and how have they attained physical excellence? The discussion naturally drifts to the students in the class, their associates and friends. The pupils should be encouraged to ask themselves how they compare with their ideal and what they can do to improve themselves.

Thus, no matter which grade level is considered, a successful introductory unit puts pupils in a receptive frame of mind for the program which is to follow. The same general plan can be applied whether the setting be a one-room

You'll enjoy MILK this 6-flavor way

Rennet-custards digest easier than plain milk

"JUNKET" Rennet Powder—Already sweetened and flavored for making an endless variety of rennet-custards. Made in 3 minutes—just add to LUKE-WARM milk. No eggs, no baking, no boiling. Six tempting flavors:

Vanilla Chocolate Lemon
Orange Raspberry Maple

"JUNKET" Rennet Tablets—Not sweetened or flavored—add sugar and flavor to taste. More economical for making rennet-custards, easily digested milk foods for infants, invalids and convalescents. Also for making smoother ice cream with less cream in hand freezers.

FREE Recipe Book

—for 61 new desserts and ice creams—mail postcard to "THE 'JUNKET' FOLKS," Chr. Hansen's Laboratory, Inc., Dept. 339, Little Falls, N. Y.

ACCEPTED AMERICAN MEDICAL ASS'N

GELATIN

is 91% Pure Digestible Protein. If you would like to have authentic detailed information on this highly useful food, see ad page 859.

INQUIRIES ARE WELCOMED.

YOU KNOW HIM . .

but do you know the reasons why Cream of Wheat is the preferred cereal in millions of American homes? Some of the important facts are given on page 845. But why not make an actual trial?—50 generous servings at less than half a penny each!

The Cream of Wheat Corp. Minneapolis, Minn.

● WHENEVER SODIUM BICARBONATE *is prescribed . . .*

Remember that either Arm & Hammer or Cow Brand Baking Soda are Sodium Bicarbonate, U. S. P. See page 863 for details.

CHURCH & DWIGHT CO., Inc.
10 Cedar St., New York, N. Y.

Babies Thrive on *Carnation* MILK

Many noted baby specialists prescribe this pure, nourishing super-digestible milk—irradiated for "sunshine" vitamin D. Why not ask your doctor about Carnation Milk for your baby? See page 864.

rural school, one classroom in a large city system or an all-school nutrition program.

HEALTH HEROES OF THE PAST SPEAK

JACKIE REEHM HANNAH

Teaching is something besides the presentation of mere facts. It involves the kindling of the imagination so that facts may have meaning and interest. The following script was prepared for a broadcast in a class in health education in the Indiana State Teachers College, Terra Haute. It demonstrates a method which might be used in health teaching in high schools.

ANNOUNCER: Radio audience, let us pause in our forward flight for one brief hour, leave today and go back to yesterday. Let us see what would happen to a student of 1937 in Indiana State Teachers College, if time suddenly carried him back to the halls of science of the immortal past.

STUDENT: Time in its flight has ceased. An inexplicable force created somewhere out there beyond the horizon is suddenly rushed to earth and stops my forward progress, takes me back into the past. Today is not yet; yesterday is here. What shall I do in this past? I had thought only of the future, of places I should go, great people I should meet; but now, surely there is nobody here who could be of interest. All the great people who were doing things in science were living in 1937. *(Enter 1898)* But who are you? Where am I? What is the year?

MADAM CURIE (1898): My dear student, you are in Paris, France. The year is 1898, and I am Marie Curie. I was born in Warsaw, Nov. 7, 1867. I received my science degree at the University of Paris. In 1896 I began my research into radio activity and in 1898 obtained polonium and radium from pitch blend which I had subjected to a very laborious process of fractionation. *(Exit)*

STUDENT: Madam Curie! She gave to the world one of the greatest means of combating cancer. *(Enter 1890)* Who are you, Sir?

EIJKMAN (1890): I am Christian Eijkman. You are in the Dutch East Indies in the year 1890. I was a Hollander by birth and

"But, my dear, you should put Baby on Gerber's!"

"I know you want to give your baby the *best* care and attention. You can do that however, not by slaving over the cooking and straining of vegetables and fruits, but by putting baby on Gerber's. Why don't you ask your doctor?"

More mothers buy Gerber's

"I am glad I took my neighbor's advice. Look at baby—so happy, healthy! He's done *so* well since I've been giving him Gerber's. No wonder that *more* mothers buy Gerber's!"

"And Gerber's Strained Foods are such time-savers. Now I've *extra* hours every day that I can devote to other necessary phases of baby's welfare. Gerber's makes me a better mother!"

Look for the happy, healthy Gerber baby on every can of Gerber's Foods.

Gerber's

Shaker-Cooked Strained Foods

STRAINED VEGETABLE SOUP—TOMATOES—GREEN BEANS—BEETS—CARROTS—PEAS—SPINACH—PRUNES—CEREAL—APRICOT AND APPLE SAUCE—LIVER SOUP WITH VEGETABLES.

GERBER PRODUCTS COMPANY
Dept. 129 FREMONT, MICHIGAN
(In Canada, Gerber's are *grown and packed by* Fine Foods of Canada, Ltd., Tecumseh, Ontario.)

FEED your tiny tot Heinz Strained Foods and see how eagerly he eats! He'll like their natural color! He'll appreciate the tasty flavor Heinz cooks in—never out. Choicest fruits and vegetables are prepared *scientifically* to preserve vitamins and minerals. There are 12 delicious Heinz Strained Foods from which to choose. You pay no premium for their extra quality.

GUARD YOUR BABY'S HEALTH—LOOK FOR THESE SAFETY SEALS

57 HEINZ STRAINED FOODS

A GOOD MILK FOR THE BABY

● Ask your family doctor about White House Brand Evaporated Milk for baby's feeding formula. And use it in cooking—wherever your recipes call for milk. See page 860 for details.

SOLD BY A & P STORES

A Free Recipe Book

Write for the free "Junket" Recipe Book—61 new, easily digested rennet-custard desserts and ice creams. Mail request to "The 'Junket' Folks," Chr. Hansen's Laboratory, Inc., Dept. 333, Little Falls, New York. See further details page 861.

Saves Work for Mothers

Why go to the trouble of cooking and straining vegetables for baby when, for only a few cents a day, you can feed Gerber's Strained Vegetables? 9 foods to choose from. See page 861.

GERBER PRODUCTS CO.
Fremont, Mich.

Mention HYGEIA when writing to Advertisers

obtained my education at the University of Amsterdam. I am here now to continue my study of beri-beri. Through my research I have been able to eliminate the belief that this disease is caused by microbes or germs. By means of food experiments I have been able to demonstrate that the cause is due to the defective nature of a diet consisting of polished rice. *(Exit 1890)*

STUDENT: I have met and talked with Dr. Eijkman, the man who discovered vitamins. *(Enter 1885)* And you, are you another great scientist of the past?

TRUDEAU (1885): I am Edward Livingston Trudeau. You are now at Saranac Lake in the Adirondacks in the year 1885. I was born in New York City, Oct. 5, 1848. I studied medicine in that city and graduated in 1871. After my return from a trip abroad, it was found that I had tuberculosis. My life from then on depended on my remaining here in the mountains. I had a keen desire to aid others afflicted with this disease, so I have now built the first unit of my sanatorium known as "The Little Red." With the aid of the work formerly done by Pasteur, Koch and Lister, I have continued my work in tuberculosis. *(Exit)*

STUDENT: Edward Livingston Trudeau, the brilliant man who worked to conquer the tubercle bacillus and lighted the eternal lamp of hope for those whose lives were blighted by this dreaded disease. *(Enter 1879)* And you?

JACOBI (1879): I am Mary Putman Jacobi. You are in New York City in the year 1879. I was born in London in 1842. My one desire was to become a doctor, despite the intense prejudice against women in this profession. I went to Paris, France, in 1867 and after waging a terrific fight became the first woman to enroll at the Ecole de Médecine. Here I obtained my degree and became again the first woman to enter the college of medicine. Since then I have lectured here in America, maintained my private practice and prepared more than a hundred important papers for medical societies. *(Exit)*

STUDENT: Mary Jacobi, your vision must have been surpassed only by your courage. *(Enter 1855)* And am I to meet still another?

NIGHTINGALE (1855): Yes, student, you are now at the Turkish Military Hospital at Scutari, on the Bosporus. But let me tell you why I am here and who I am. I am Florence Nightingale and have devoted my life to hospital work and to establishing women in the nursing profession. The early stages of the Crimean War here disclosed a terrible state of affairs in regard to the treatment of the wounded. The hospital arrangements were inadequate and unorganized. The usual satellites of warfare—fever, cholera and dysentery—were doing their deadly work among the wounded and the healthy alike. The government asked for my services, so I came here, raised a band of trained nurses, took command of the hospital and introduced system and order where indescribable chaos had reigned. *(Exit)*

STUDENT: Now I know that we of the present must bow before the shrine of the past, in honor of those immortal men and women who devoted their lives to laying a foundation on which we could build a structure of science that would give us the right to call ourselves an advanced people. Truly their memory is a benediction.

ALL IN THE DAY'S WORK

MARY B. RAPPORT
Health Teaching Supervisor
Onondaga Health Association
SYRACUSE, N. Y.

Beginning with this number and continuing through the year a supervisor of health teaching will give us some vivid pictures of good health teaching. These brief sketches will carry us right into the atmosphere of the schoolroom. The first story is about a teacher who was making the best of her limited opportunities for health teaching.

THE happy voices of the children clearly revealed that recess at this rural school was fun. At first I didn't see the teacher, as she was not much bigger than some of the older pupils.

"We all like to play," she remarked laughingly. Then she turned to the group and said, "Children, I am going to be busy now, so you may finish the game yourselves."

Without a murmur the children went on playing, while we stood aside for a chat. "We are not doing anything special in our health work," said Miss Jones, "but we are trying to do our bit whenever we can. I think we have

made the most improvement in learning how to live together."

When she rang the bell the children came breathlessly from the exercise and slowly went into the schoolhouse. Quietly they washed their hands, using a tin basin, a bottle with liquid soap, a sprinkling can and a pail.

"We haven't any paper cups today, as our supplies haven't come. What do you think we should do?"

Billy immediately spoke up, "Since our hands are clean, we could make some cups from that clean white paper." The rest agreed that that would be the best way to meet the problem.

Paper was passed to the group, and cups were soon improvised. The youngsters quietly went to the stone fountain, turned the spigot and drank. They were busy at work when I left.

On my way to the next school I kept thinking about how well those children were developing resourcefulness in meeting any situation. Certainly that teacher is using her opportunities for excellent health teaching.

NATIONAL ASSOCIATION FOR NURSERY EDUCATION CONFERENCE

The biennial conference of the National Association for Nursery Education will be held in Nashville, Tenn., from Oct. 20 to 23, 1937. The program has been built around the general theme of "Safeguarding the Early Years of Childhood," and specialists in the fields of medicine, psychiatry, dentistry, anthropology, social work, psychology and nursing will be present to take part in the discussion.

HEALTH RESOLUTIONS

At the recent annual meeting of the American Home Economics Association several resolutions were passed which were intended to be of benefit to school and community health. One of these declared that school administrators should be urged to provide for participation of home economics teachers in those phases of health education in which they are best qualified to give instruction. Another resolution recommended that school administrators should be urged to secure supervision of the school lunchroom by trained persons on a professional rather than a commercial basis.

91 YEARS

Is a Long, Long Time—

YET . . .

FOR almost a century we have been content to specialize in the production of pure Baking Soda (which is pure Bicarbonate of Soda). We've felt no yearning to put out a long line of drugs "good for all ills."

Don't forget that our Bicarbonate of Soda (call it Baking Soda if you prefer) is used in the home and in medical practice probably more than any other drug.

If a physician recommends Bicarbonate of Soda for relief from hyperacid types of indigestion, Arm & Hammer Baking Soda may be used because it is pure Bicarbonate of Soda. The usual dosage is one-half teaspoonful in one-half glass of cool water.

Thanks to this, modern housewives keep one of the handy sealed containers in their kitchens, another in their medicine cabinets. Our 91 years' experience in the production of Arm & Hammer and Cow Brand Baking Soda—they are identical—accounts for their purity and dependability. Available in almost any grocery store. Cost only a few cents a package.

Business Established in 1846

CHURCH & DWIGHT CO., Inc.
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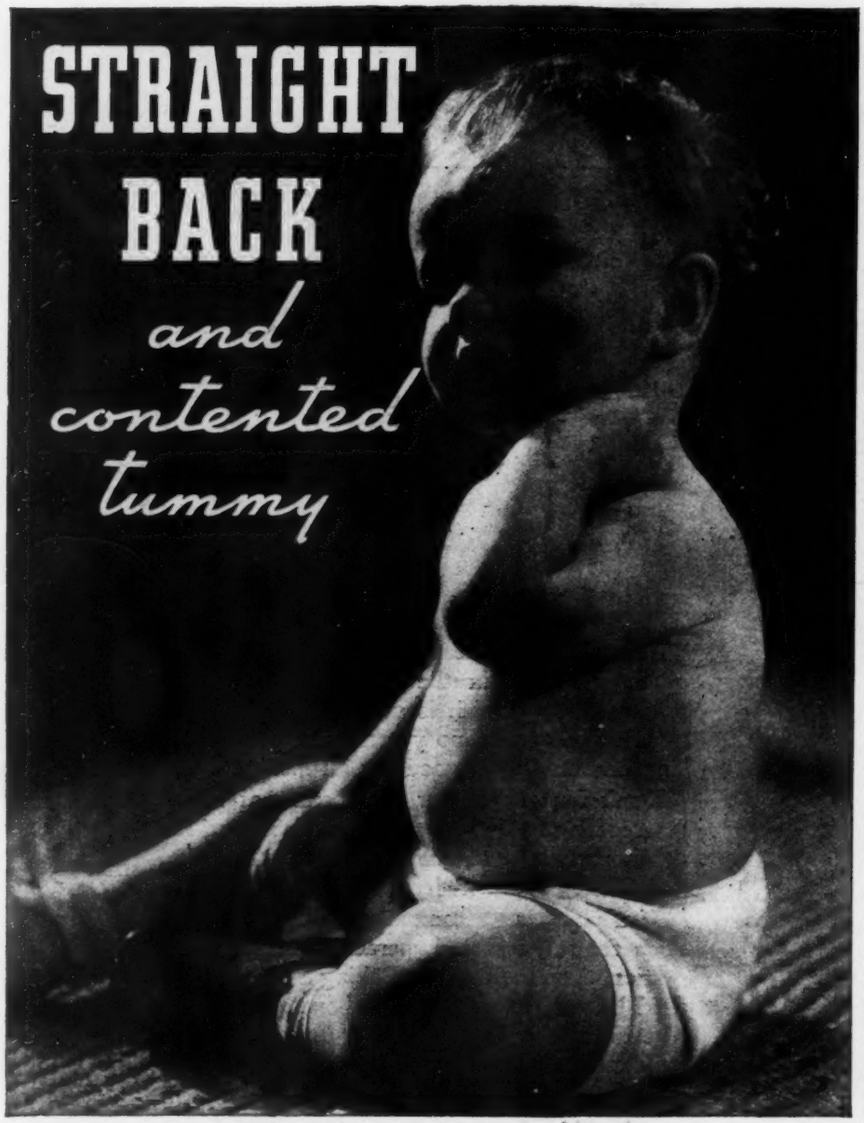

● How wonderful to watch your baby each day grow a little bigger, a little rounder! But, as he develops, are you watching to make sure that his little back will be *strong*, his legs *sturdy*, and his teeth *firm* and *sound*?

Modern mothers can help in so many ways in *safeguarding* baby's growth. And one of the *best* ways of providing the needed bone-building, tooth-forming minerals is to give your baby Irradiated Carnation Milk.

Being irradiated, this milk guarantees an extra *year-round supply* of sunshine vitamin D—the vitamin that enables babies to absorb the body-building minerals. And it *agrees* with babies, because it's *more easily digested* than ordinary milk.

Irradiated Carnation Milk is accepted by the American Medical Association's Council on Foods. Doctors everywhere are prescribing it for babies. Ask *your* doctor about this pure, safe milk that's *also* so convenient and economical.

Write for free booklet

"The Contented Baby" is a 32-page color-illustrated booklet which tells all about this excellent milk—how good it is for infants, children and all the family. It includes, too, several recipes for nourishing dishes in which milk has an important part. Write today for your free copy. Address Carnation Company, 937-H Milwaukee Gas Light Bldg., Milwaukee, Wis.; or Carnation Company, Ltd., Toronto, Ontario.

IRRADIATED
Carnation Milk
"FROM CONTENTED COWS"

RECREATION'S CONTRIBUTION TO CHARACTER

The various recreational activities probably have much more to do with the development of character and disposition than do the academic subjects, declares Dr. Thurman B. Rice in a recent article in the *Monthly Bulletin, Indiana Division of Public Health.*

This is because character, honesty and industry are developed by actually doing things rather than by merely reading or hearing about them. Play is essentially a development of skills, and it is significant that the immature person learns physical skills far more readily than does the adult.

There should be developed in the grade school child the ability to abide by the decision of some neutral person or official without too much protest. Furthermore, he should learn to wish to play the game in a manner that is acceptable to his opponents as well as his playmates. Such an individual may be presumed to be more willing in later life to abide by the laws and customs which will control his adult activities. The development of good sportsmanship is one of the most important considerations of child training. Grade children need specifically to be shown the reason why it is unsportsmanlike to take unfair advantage or to cheat.

They need to know why betting on athletic events is unsportsmanlike and that it tends to prostitute otherwise excellent sports. Betting is simply a means of intensifying the rivalry between two teams or two competitors. Most of the evils of modern amateur athletics are due to the fact that the competition is already too sharply drawn.

It is extremely important that every individual should learn to play. Most tragic are the lives of those persons who know how to work but do not know how to relax and enjoy themselves. As the young people from high school and college are likely to be attracted into some particular sport it is well that in grade school they be encouraged to become interested in a wide variety of physical activities which may last as long as they live.

As long as vitalism and spiritualism are open questions, so long will the gateway of science be open to mysticism.—*Virchow.*

•

Education—a debt due from present to future generations.

—*George Peabody.*